

EUROPEAN NEWS

Woerner fate uncertain after Kohl meetings

BY RUPERT CORNWELL IN BONN

THE FATE of Herr Manfred Woerner, the West German Defence Minister, was still obscure last night, as he met Chancellor Helmut Kohl for the second time in a few hours. Despite mounting uncertainty and pressure for a speedy decision there was still no exact indication of when — or how — the Chancellor would resolve the most awkward political calculation of his 15 months in office.

Dismissed General Guenter Kiessling from the beleaguered Herr Woerner. But no word was available of the substance of the meeting, beyond bland semi-official assurances that the minister had neither offered nor been asked for, his immediate resignation because of his handling of the investigation of the general's allegedly homosexual leanings.

The Chancellor himself, plainly tired after his difficult visit to Israel last week, tried throughout the day to convey the impression of calm. His responsibility, according to the government spokesman, was to examine the affair "accurately and thoroughly" before making up his mind. The discussions with his advisers are expected to continue today.

In the meantime, however, the shadow of Herr Franz-Josef Strauss, the leader of the CSU sister party of Herr Kohl's Christian Democrats and the Chancellor's great political rival, loomed steadily larger.

Herr Strauss is expected to meet Herr Kohl in Bonn today, though no confirmation was forthcoming. But he has already let it be known that he would be ready to take over as Defence Minister, should Herr Woerner be forced out.

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Norway to offer oil concessions abroad

BY FAY GJESTER IN OSLO

FOREIGN oil companies have been offered substantial stakes in 14 petroleum exploration concessions which the Norwegian Government plans to allocate soon under the country's eighth offshore licensing round. Of six of the concessions, moreover, the Government has asked foreign companies to act as operator. Deadline for acceptance of the Government's proposals is February 7.

Foreign oil companies will be offered a series of "approved" Norwegian oil concessions allowed to take part in activities on Norway's shelf. DNO, which to date has been forced to operate outside Norway, will be offered stakes in two blocks or licensed areas — including the most promising of the 14, "Diamond block" (34/7). Its share will be tiny — 1 per cent, on each block — and as the price of admission to 34/7 it must also accept the 1 per cent it is being offered on the far less attractive North Norwegian block 7121/7.

Inflation falls in Italy

BY JAMES BUXTON IN ROME

THE ITALIAN inflation rate is continuing to fall after dropping below 13 per cent last month for the first time for several years. This month prices rose 1.2 per cent, producing an annual inflation rate of 12.5 per cent.

The monthly increase was higher than for the previous two months, mainly because indexed rents automatically went up at the beginning of the month.

Spain's entry hopes lifted by French minister's visit

BY DAVID WHITE IN MADRID

A TENTATIVE revival of optimism in Spain about relations with France and the prospects for unblocking negotiations on enlargement of the Community. However, Sr Moran said at the weekend that Spain would not set a deadline for completion. He chided Sr Mario Soares, the Portuguese Prime Minister, for being "a little childish" in suggesting that Portugal would withdraw its entry bid if its negotiations were not finished this summer.

During his recent visit to Lisbon, Sr Pierre Mauroy, France's Prime Minister, stressed that his Government would do all it could to speed up entry negotiations. Sr Soares, meanwhile, is trying to good Community leaders into giving a clear answer.

Gromyko looks to Romania

By Anthony Robinson in London

HAVING re-established lines of communication with the West through a series of bilateral meetings with Nato foreign ministers at the Stockholm disarmament conference, Mr Andrei Gromyko, Soviet Foreign Minister, has now turned his attention to improving Soviet relations with Romania.

Soviet military spending growth slows down

BRUSSELS — The rate of growth of Soviet military spending has slowed markedly over the past seven years after soaring in the early 1970s, a study by Nato's Economic Committee has concluded.

Banking Systems: The Spirit of Competition.

By Rupert Cornwell in Bonn

THE West German Carlel Office has formally asked three of the country's leading oil companies to make changes in the petrol and diesel distribution system of their jointly-owned subsidiary Aral, on the grounds that the present arrangement limit fair competition.

Hitherto, the company, which operates West Germany's biggest petrol station chain with some 4,400 stations in the country and 2,000 abroad, has distributed products supplied by its three parents on the basis of their shareholdings in Aral.

The three owners are Veba Oil, which holds 50 per cent of Aral, Mobil Oil AG, which has 20 per cent, and Wintershall AG, part of the BASF chemical group, with 15 per cent.

Aral criticised on competition

By Rupert Cornwell in Bonn

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EUROPEAN NEWS

UK holds last-minute steel talks on eve of EEC deadline

By PAUL CHEESBRIGHT IN BRUSSELS

THE European Community's effort to restructure its ailing steel industry reaches another turning point today as the Ten run into a deadline for the final submission to the Commission of their industrial and financial plans for national steel industries. Without Commission approval of these plans, governments cannot provide new subsidies for their industries. But subsidy programmes agreed with the Commission before today will continue.

The British Government yesterday was involved in last-minute talks with the Commission on further subsidies, independent of a new corporate plan for the British Steel Corporation (BSC).

Today's deadline springs out of agreements reached in June 1981 when the Ten agreed first to control the steel market and second to a code for the grant of subsidies for the steel companies.

This Code of Aids, as it is called in Brussels jargon, spells out the conditions under which subsidies could be granted and laid down a timetable for their elimination by the end of 1985. In 1986, the European steel-makers should be operating without subsidies, competing in a free market. The market controls come off at the end of 1985, too.

The Code links the provision of subsidies to the elimination of capacity and the achievement of financial viability by the end of 1985.

In June 1981 it was decided that by the end of September 1982, the Ten would have to submit their restructuring plans to the Commission. By the end of June 1983, the Commission would have to give a ruling on these plans — that is, it would have to decide what level of subsidy would be appropriate in order to reach the end-1985 target. The plans were not generally

produced, except in sketchy form, however. Then, in September 1982, the Ten decided that they would have to cut more capacity anyway. This forced the Commission to two things: first, at its June 1983 deadline it could give only conditional approval to what national plans it had and, second, it spelt out the extra capacity cuts which each nation would need to make.

Today, this conditional phase ends in line with the deadline the Commission imposed last June when it could not do fully what in June 1981 it had been told to do.

Until now the Commission has been allowing governments to provide what might be loosely called interim subsidies. That now stops. "Minitranches of aid to allow companies to survive is finished," said Mr Frans Andriessen, the competition commissioner, last week.

The only fresh authorisations of subsidy will have to be linked to a final restructuring plan. To win the authorisation a government will have to prove to the Commission:

- that a company will be viable by the end of 1985;
- that a company is making enough capacity cuts to secure that viability, in line with the cutback decision of June 1983.

But where there is no plan, there can clearly be no Commission decision and that is the case for Britain, France and Italy.

In these cases, subsidies being paid will have to have been agreed by midnight tonight. Hence, the British flurry of talks with the Commission. The final BSC plan will not be in Whitehall until April; thus it will certainly not be in Commission hands until the summer.

So, breach of the deadline does not mean that no further subsidies can be paid, but that no fresh subsidies can be authorised.

Bonn warns would-be refugees

By Our Berlin Correspondent

BONN has warned East Germans attempting to leave the country for the West not to seek refuge inside Western embassies in East Berlin. Two groups of East Germans recently took refuge in the U.S. embassy and the West German permanent mission in East Berlin and were subsequently allowed to go to the West.

The warning, by Herr Philipp Jenninger, Chancellor Helmut Kohl's aide in charge of relations with East Germany, was broadcast repeatedly to East German yesterday in West Berlin radio news bulletins.

He told the Frankfurter Allgemeine newspaper yesterday that East Germans might quickly find themselves in a "blind alley" if they continue seeking refuge in Western embassies. Understandable as such actions were, "we must warn against regarding them as a pat solution and against believing one can force one's way out this way."

Herr Jenninger said that East Germans should not "mistakenly assume" that Western embassies or Bonn's permanent mission could grant them political asylum. "Whether we like it or not," he said, the East German authorities decide on exit permits in each case.

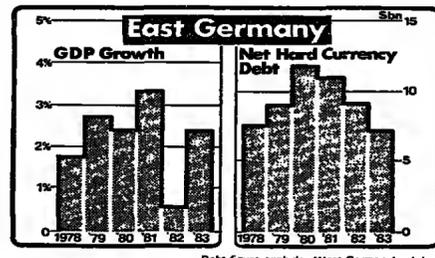
Leslie Colitt in Berlin reports on an important change in the East German economy
How a wage tax is really a price subsidy

EAST GERMAN industrial managers will find it difficult to meet the Communist Party's demand that they show a profit this year, unless they quickly start shedding manpower. For the Politburo ruling that all state industrial companies must pay a 70 per cent wage tax comes into force this month. Until now, a wage tax did not exist.

The measure, potentially the most important economic step East Germany has taken in 20 years, was published in the legal gazette last year as a decree entitled "Contribution to the Social Fund". It is designed to end the low cost of labour: average monthly industrial wages in East Germany are 1,075 marks compared with DM 2,719 in the West. East German factory managers have therefore tended to hoard workers to help cope with surges in production.

The new wage tax will not add a penny to pay packets, but will provide a large source of revenue which the Government can use to subsidise low consumer prices for basic goods and services. Subsidies will rise this year by a sharp 11.3bn marks to 33.1bn marks out of a budget of 23bn marks (£5.8bn).

The East German Press has said little about the wage tax. The official view is that it is not a reform—the word is anathema—but a routine method of improvement. One reason for the reluctance to discuss it publicly is that it is designed to redistribute manpower on a large scale. If successful, it will undoubtedly cause many East Germans with high qualifications to end up in jobs they feel are below their standard.



Debt figure excludes West German bank loans

The word reform has been taboo in East Germany since the proclamation 20 years ago of the New Economic System of Planning and Administration (Nosp) under which company profits were suddenly given a central role in the economy and industrial prices were reformed.

The New Economic System was derived from a Pravda article in 1962 by the Soviet economist, Mr Jevsei Liberman, who said profits should be the chief indicator of a state company's performance and that employees should be given bonuses based on company profitability.

East Germany's late leader, Herr Walter Ulbricht and his chief economic planner, Herr Gunter Mittag, went several steps beyond the cautious Soviet reforms based on Mr Liberman's teachings, and this proved to be the downfall of Nosp which was silently buried at the close of the 1960s.

Herr Mittag, who is still the Politburo secretary responsible for the economy, has convinced Herr Erich Honecker, the present East German leader, that many elements of Nosp were correct and that Mr Yuri Andropov, the new Soviet leader, is heading in the same direction. This time, however, East Germany is being careful not to outpace the Soviet Union.

The prices which industry pays for its raw materials are again being raised in East

Germany this year to bring them further into line with international levels. Starting this month, East German agriculture has to pay the same prices as industry for energy and other purchases, while collective farms and producers with garden plots will be paid at least 15 per cent more for their crops to stimulate higher yields.

Consumers, however, do not face higher prices for basic foods, services, transport (which from next year will also pay the wage tax) or rent, which all remain at the level of the late 1960s. This explains the sharp jump in subsidies this year, to maintain low prices for essentials.

After telling the people for years that stable prices for essential goods and services represent one of its most important achievements, the party would find it difficult to reduce the enormous consumer price subsidy. This is said to cover 80 per cent of all consumer products. East Germans question this figure, complaining of constantly rising prices for all but basic goods. There is no desire to move in the direction of Hungary's socialist market economy however, where most prices have been freed from controls.

All the measures introduced in East Germany to make the economy more efficient are centrally issued directives, including regulations to save energy and raw materials, and even a decree describing in detail how metallurgical products are to be distributed.

The more decrees issued, the more controls are needed to see that they are followed. Thus, the party has introduced a decree obliging general directors of the Kombinate—the enormous industrial trusts—to render accounts to their superior Ministry to make sure they comply with directives on saving raw materials and energy.

Until now, the highly centralised command economy has worked better in East Germany than in other Comecon countries, especially the Soviet Union. But now it is being called on to propel East Germany into the micro-electronics age and to close the 30 per cent gap in labour productivity compared with West Germany.

The country has set itself a target of 4.4 per cent growth this year, the highest among the Comecon countries. It is trying to increase exports and curb imports so that it can repay an estimated \$4bn this year on its hard currency debt of which, \$8bn is owed to foreign banks, and \$1.5bn to West German banks. It must also repay its cumulative trade debt to the Soviet Union, which has soared in recent years because of higher priced Soviet energy.

The introduction of the wage tax may go some way toward improving the efficiency of East German industry. However, it is the lack of competition in the large industrial Kombinate and the absence of a profit motive which could undermine its hopes of restructuring the economy in the longer term.

Finsider likely to reopen Bagnoli complex soon

By JAMES BUXTON IN ROME

FINSIDER, the Italian state steel company, expects to reopen soon the Bagnoli complex near Naples as a result of the concessions on quotas which the Government obtained in Brussels last week. Ministers said at the weekend that Bagnoli's output this year would be low. Finsider declared yesterday that it was still evaluating how and when to reopen the plant.

There is a brand new plant costing £400m (£374m) for making flat products at Bagnoli. Most of the complex has been closed for more than a year and Finsider has said it would only start up the new plant if Italy won higher quotas at last week's EEC Council of Ministers.

Although Italy did not formally gain any extra quota it did get an assurance that it would be able to make use of flexibility in the quota system by taking advantage of other producers' unused quotas—to produce a few hundred thousand tonnes of steel at Bagnoli this year. Italy is also to go to the European Council in Brussels to argue its right to an extra 350,000 tonnes of quota.

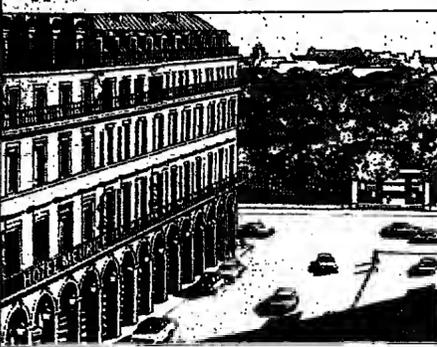
An original Italian request for 1.2m additional tonnes this year was not advanced at the meeting.

The Government has been under heavy pressure from unions and politicians to reopen Bagnoli, even though it is highly questionable whether it will be economic despite "flexibility" on quotas. However, Finsider pointed out yesterday that, as the new plant would be "running in," a high output could not be expected this year.

By today, the Government is due to present a detailed plan to the European Commission on how it intends to cut 3.8m tonnes of steel capacity by the end of 1985, in response to the Commission's request last June for a reduction of 4.8m tonnes in the public sector and 1m tonnes in the private sector.

Finsider's plan for cutting 3.8m tonnes is already with the Commission, although it has not been approved formally by the Italian Government. Plans for cutting 2m tonnes in the private sector are still vague and Brussels has not yet formally accepted Italy's shift of 1m tonnes of cuts from the public to the private sector.

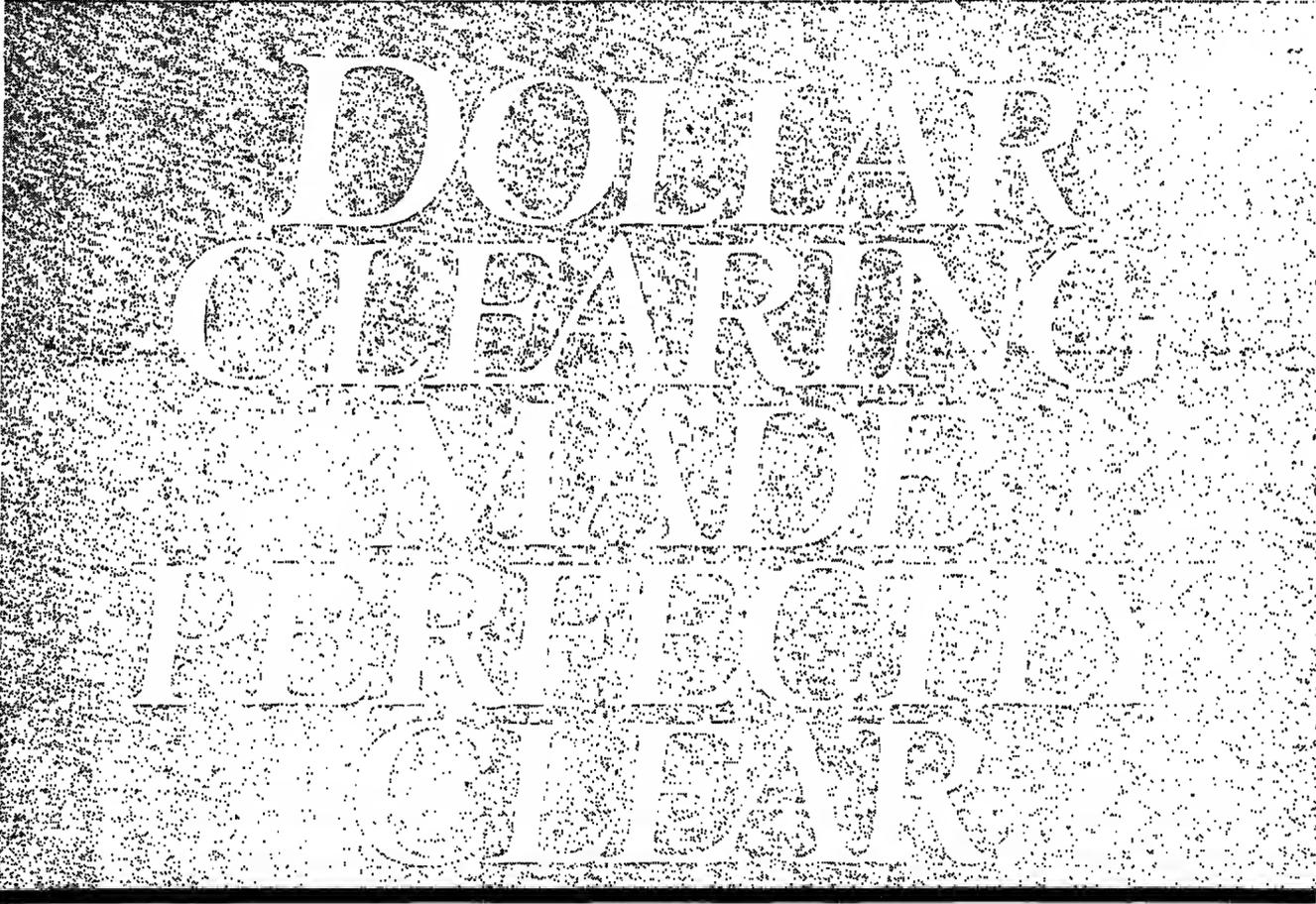
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AMERICAN NEWS

Reagan can win by landslide, says campaign chief

BY REGINALD DALE, U.S. EDITOR IN WASHINGTON

PRESIDENT Ronald Reagan would win "in far more of a rout" than in 1980 if the U.S. Presidential elections were held now...

Money-supply watchers suspect that changes in reserve requirements may have little effect on the Fed It's Thursday, not Friday, but the rest is uncertain

AN INNOVATION in the techniques the Federal Reserve Board uses to define U.S. monetary policy...

which is now being dismantled. Individual banks are required to keep interest-free reserves with the Fed...

after the end of the period. A modified lagged system remains in effect for non-transactions accounts and Eurodollars.

and the general state of the economy. So CRR is coming on stream at a time when the M1 measure, against which the contemporaneous reserves are deposited...

There is a lively debate going on within the Open Market Committee about whether the time has come to put M1 back on its pedestal.

to ensure that it does not result in unwanted shortages of reserves, which might tighten its monetary policy.

But instead of ushering in a new era of Fed policy, which monetarist economists had hoped for, the change is now thought to be unlikely to have any far-reaching impact on monetary policy for the time being.

In the U.S., the basic requirement for transactions accounts is that banks must put aside reserves at the Fed equivalent to 12 per cent of their deposit liabilities.

The Contemporaneous Reserve Requirements system is unlikely to usher in a new era of policy, writes Stewart Fleming in Washington.

more rapidly to changing demands for reserves. Economists on Wall Street, however, are suggesting that major changes are not to be expected for the time being.

It creates a new range of uncertainties for both the banks and the Fed about the likely demand for reserves and for the cost of these reserves.

Beyond such practical changes, the impact of the switch to CRR is uncertain. Salomon Brothers' suggestions for example that partly because of the Fed's reserve requirements...

Under the new rules, known as Contemporaneous Reserve Requirements (CRR), the banks will have to keep their non-interest bearing reserves at the Fed on a more timely basis.

In the 1970s monetarist economists rounded on this system of managing an important element of the monetary base, saying that it allowed the banks, not the Federal Reserve, to determine how fast the money supply would grow.

explained in more detail than can be attempted here by two Salomon Brothers economists, Mr Robert Di Giemeto and Mr Jerry Pegden.

Under both CRR and LRR, reserves are computed on the basis of a daily average deposit liability under the new system, however, the reserve maintenance accounting period will be extended from one week to two weeks.

While the Fed thus appears to have ruled out any sudden shift back to the methods which many maintain were partly responsible for the extreme interest rate volatility during 1980 and 1981 (U.S. interest rates have now been very stable for several months), the shift in CRR will not go unnoticed.

It is anticipated that for a while the uncertainty will result in an increase in reserve demands as the banks play safe. Although the Fed has attempted to offset the uncertainty in the changeover period by increasing the frequency of bank calls to "carry over" reserves from one reserve maintenance period of two weeks to the next.

Productivity growth in U.S. slows sharply

BY STEWART FLEMING IN WASHINGTON AND TERRY DODSWORTH IN NEW YORK

THE GROWTH in productivity in the U.S. which has been an important factor behind last year's modest inflation rate of just under 3 per cent, slowed sharply in the fourth quarter, the Labour Department said yesterday.

U.S. to sell helicopter spares to Guatemala

BY OUR U.S. EDITOR IN WASHINGTON

THE REAGAN Administration has taken a controversial decision to sell \$2m (£1.2m) worth of helicopter spares parts to Guatemala—in the first sale of military equipment to the country since 1977—U.S. officials said yesterday.

IMF interim committee to meet in April

By Philip Stephens

INDUSTRIAL nations have set April 12 as a provisional date for a meeting of the International Monetary Fund's policy-making Interim Committee, apparently settling differences over whether it should convene this spring.

Two fight for Ecuador Presidency

BY SARITA KENDALL IN QUITO

THE TWO leading candidates in the Ecuadorian Presidential election, Sr Rodrigo Borja and Sr Leon Febres Cordero, will go forward to a second round runoff as predicted by opinion polls, as neither won an absolute majority in Sunday's voting.

Unofficial results covering some 20m votes, estimated at more than three quarters of the total, gives Sr Borja 28.7 per cent and Sr Febres Cordero 27.3 per cent. In third place, Sr Angel Duarte with 12.4 per cent.

though both will be well represented. The Government's Christian Democrat Party made a poor showing, mainly because of its tough economic measures President Osvaldo Hurtado has had to adopt.

Former Chilean minister arrested

BY MARY HELEN SPOONER

THE former Chilean Finance Minister, Sr Rolf Luders, has been arrested on Government charges of violating banking laws while serving as vice-president of a meeting of one of the country's largest financial conglomerates, the BHC group.

Sr Luders, a University of Chicago-trained economist, was Finance Minister barely six months before his abrupt removal last February. His departure came in the wake of other Chilean officials' who were meeting with foreign creditors.

banks to refinance \$1.5bn (£250m) of Chile's \$18bn foreign debt and following the decision of Gen Augusto Pinochet's regime to seize administrative control of some troubled banks and finance companies.

OVERSEAS NEWS

Council of Europe assembly halted

STRASBOURG. — A protest over the presence of Turkish delegates at the Council of Europe assembly yesterday forced a suspension of its five-day winter session immediately after it opened.

1984 has heralded a spate of unexpected strikes in South Africa Black workers raise their fists

BY BERNARD SIMON IN JOHANNESBURG

NINETEEN EIGHTY-FOUR was expected to be a calm year on the labour front in South Africa. With the economy in deep recession, unemployment mounting and managers in no mood for concessions, it was widely assumed that the fast-growing band of black trade unions would not risk a major confrontation.

month, it enthused in its in-house magazine that "the year ahead offers the opportunity for even more excitement and higher rewards."

up by Mr David Sebali, general secretary of the Metal and Allied Workers Union (Mawu) which has made some of the most spectacular advances in recent years.

Ivory Coast in line for \$90m loan from IMF

By Peter Blackburn in Abidjan

THE International Monetary Fund (IMF) is expected to approve a one-year stand-by credit worth some \$90m for the Ivory Coast. Approval is likely in March and follows agreement in principle on a new programme, reached in Abidjan last week, according to finance officials.

Egyptians accept invitation to rejoin Islamic Conference

BY CHARLES RICHARDS IN CAIRO

EGYPT has accepted an invitation to rejoin the Islamic Conference Organisation (ICO), from which it was suspended in May 1979 for signing a peace treaty with Israel.

Egypt experts talks in Cairo next month with the national Monetary Fund on credit facility, central bank officials say, said Cairo Correspondent writes.

INVESTORS CHRONICLE

Post to: Investors Department, Market News, FREEPOST, London EC4B 4QJ.

Australia plans petroleum resources rent tax

BY MICHAEL THOMPSON-NOEL IN SYDNEY

THE Australian Labor Government that woe power last March is embarking on its first significant battle of wills with a major industry. This arises from its determination to introduce a resources rent tax (RRT) in the petroleum industry in time for the 1984-85 financial year.

is left after deduction of all expenses, plus an amount equivalent to the minimum return necessary to encourage investment in new projects.

The key features of the rent tax are these: It will replace existing taxes and royalties on all petroleum resources (crude oil, condensate, LPG, and natural gas), and will not be an additional tax.

Drought-hit nations in talks

By Our Abidjan Correspondent

HEADS OF state from eight drought-stricken nations in Africa's Sahel region yesterday began a summit meeting in Niamey, the capital of Niger, to co-ordinate their appeals for increased aid.

Beirut airport closed as marines come under fire

BY PATRICK COCKBURN IN BEIRUT

BEIRUT airport was closed for about two hours yesterday when U.S. marines came under rocket and mortar fire. The marines replied with tank fire.

consider it too dangerous. Meanwhile, in Damascus, Mr Donald Rumsfeld, the U.S. special negotiator for the Middle East, had further talks with Syrian leaders.

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BARCLAYS

SMALLER EXPORTS SCHEME

WORLD TRADE NEWS

Champagne exports rise 13%

By David Marsh in Paris
"PEOPLE ARE drinking because they want to forget about the economy," says with a smile a leading executive at Moët-Hennessy, France's leading champagne house.

Whatever the reason, French sales of champagne braved the domestic recession last year to rise by 7 per cent — while bottles of bubbly sold abroad popped up by 13 per cent, thanks above all to sharply higher demand in Britain, the U.S. and Germany.

The corking performance — which followed four years of progressive sales declines — is ascribed by champagne specialists to the good harvests of 1982 and 1983, stable prices and the spurt of demand on export markets.

Overall bottles sold last year, at around 159m (up from 146m in 1982) however were still a long way short of the record total of 186m in 1978.

Domestic sales — which account for about 70 per cent of international consumption, the same as five years ago — totalled 109.8m bottles, against exports of 49.6m.

Last year's French sales succeeded in just creeping above the 109.4m sold in 1981, the year President Mitterrand came to power.

Demand from thirsty drinkers last year was led by Britain, where consumption rose 30 per cent to just over 10m bottles. In the U.S., sales rose 37 per cent to 9.7m bottles, while German trade — perhaps linked to Chancellor Kohl's election victory — increased by a whopping 46 per cent to 5.3m.

Sweden backs credit for Kenya plant

STOCKHOLM — Sweden's Government announced last week it had approved a special export credit worth Skr 300m (£26m) for Skanska Cementgjuteriet (SCG), a Swedish construction company, to build a power plant in Kenya.

SCG, in co-operation with the Foundation Company of Canada, in which it has a 39 per cent stake, has won four contracts involving the construction of the power station and the building of an adjoining permanent residential area.

The credit facility is the largest the Government has approved so far for a project in a developing country. It is expected to lead to possible Swedish exports of goods and services totalling Skr 205m.

AP-DJ

Work to be resumed on N-plant

By Leslie Collett in Berlin
FEASIBILITY WORK is to resume on the Bushehr nuclear power plant following an agreement between Iran and the West German company, Kraftwerk Union (KWU).

The project came to a halt after the 1979 revolution, when foreign experts left the country. Work on the two 1,200 MW reactors is between 50 and 80 per cent complete.

The first group of KWU specialists has arrived at the site of the power station.

KWU was commissioned by the Iranian Government to determine if it is prepared to complete the nuclear power project and at what cost. KWU says it will take up to nine months to finish its feasibility study.

In addition to the power station an adjoining city for 10,000 inhabitants was built as well as a harbour. The Iranians said the entire project was worth \$3.2bn of which \$2.28bn was paid to KWU. The company said only that it was the largest project it had ever built abroad.

Japan's vehicle exports up 1.4% last year

TOKYO — Japan exported 5,660,510 passenger cars, trucks and buses in 1983, up 1.4 per cent from a year earlier, while importing only 35,289 cars, industry officials said yesterday.

The modest export increase followed a 7.6 per cent decline in 1982 from a record annual high of 6,048,447 vehicles in 1981, an official of the Japan Automobile Manufacturers Association said.

The Association attributed the 1983 rise to increased demand for new cars in the U.S. and Western Europe following economic recovery.

The exports consisted of 3,806,395 passenger cars, up 1 per cent from 1982, 1,822,429 trucks, up 2.8 per cent, and 40,885 buses, down 13.3 per cent, the official said.

The U.S. was the biggest importer, with 2,234,375 vehicles, or 37.7 per cent of AP

Japan's total exports. They included 1,607,352 passenger cars, up 0.4 per cent from 1982, 536,477 trucks, up 29.7 per cent, and 46 buses, the official said.

AP

Nancy Dunne reports on Washington's attempt to extend extra-territorial sanctions
Uncertain future for the U.S. export act

"I'm proposing, as part of the Act, that we set up armed guards at every toy store to make sure that no Soviet agent sneaks in and buys 'Speak n' Spell'."

Although he was speaking tongue-in-cheek, Senator Paul Tsongas illustrates one end of the wide spectrum of Congressional thought on the future of the export Administration Act (EAA), which governs U.S. export controls. Of the 80 odd provisions contained in the House and Senate draft versions of a revised EAA, just 20 are similar.

It will only be through a mammoth compromise that a Bill acceptable to the President emerges from a congressional conference committee by February 29, when the old legislation, now extended twice, is next due to expire. In fact, so much of the new EAA is anathema to the Administration that the President is said to prefer a permanent extension of the current Act.

It is the EAA which gave him the authority to impose extra-territorial sanctions in a controversial and futile attempt to stop equipment sales for the Siberian gas pipeline project.

The school of thought held by Senator Tsongas and most of the business community is that U.S. export controls are cumbersome, inconsistent and unnecessarily

ridiculous. Worst of all, they have failed to prevent the transfer of technology to Communist countries.

However, most of the leakage, they contend, has occurred through illegal activities such as espionage and theft, which the EAA does not address. In fact, they say, export controls have weakened the U.S. by frustrating the efforts of American business to compete in the international marketplace.

Reagan Administration hard-liners, on the other hand, argue that "a virtual haemorrhage of strategic technology to the Soviet bloc" can be stemmed by tighter controls. They want the power to impose import curbs on foreign companies which violate multilateral export control rules.

To buttress its case for more control, the Administration gave wide publicity to an incident which occurred when the Commerce Department prevented the shipment of a highly sophisticated computer system to an overseas company already under investigation and controlled by a man under indictment for violating U.S. export laws. The computer was seized minutes before it was to be shipped to the Soviet Union via Sweden.

The "near-miss" produced:

- New calls for a stronger role



Sen. Tsongas: controls are cumbersome

by the Defence Department in controlling the flow of high technology exports, now monitored principally by the Commerce Department;

- An agreement between the Commerce Department and the Customs Service, designating Customs as the liaison agency with foreign Governments rather than Commerce; and

- New, toughened regulations, proposed by the Commerce Department, limiting the use of multiple sales licenses granted to U.S. exporters of high-

technology products to non-Communist nations, which will add to the burden of U.S. exporters.

The last proposal is expected to produce fireworks among both exporters and U.S. trading partners. Eliminating the use of multiple licenses could place an impossible burden on the already over-trained resources of Commerce's Office of Export Administration. The number of single application licenses issued could rise from 95,000 last year to 1m, according to some estimates, seriously delaying applications.

It is widely agreed in Washington that Commerce issued the new proposals to head off attempts by the Pentagon and Customs service to get additional authority over export controls in the EAA.

The Commerce Department, which is more sympathetic to business interests, fears being reduced to a paper shuffling operation to process only licence applications.

The rules would add new extraterritorial dimensions to export control, requiring importers of U.S. products to provide Washington with information about their customers.

With various interests pulling in different directions, the shape of the final EAA, if it emerges at all, is unpredictable.

Thus far, the House of Representatives, in a Bill passed last year, agreed to bar the use of extraterritorial controls applied for foreign policy reasons, and it relaxed national security controls. The Senate Banking Committee, which has cleared a bill for floor action, gave the President the power to impose import controls, gave business a strong "contract sanctity" clause and agreed to relax national security controls, but to a lesser extent than the House.

Both houses are expected to call for the strengthening of CoCom controls and to demand a liberalisation of controls on products available to Communists in other Western nations.

"The problem," says Mr. Richard Ferle, assistant secretary of state of International security policy, "is coming to grips with the trade-offs that have to be made and who's going to make those trade-offs."

He believes, "it is better wrongly to control than wrongly to licence."

This attitude towards trade losses infuriates the business community which says that the need to improve American export performance has never been more critical, and that the "missile factor" of export controls means a dangerous loss of important U.S. markets.

India plans \$2bn orders for airlines

INDIAN AIRLINES and Air India are expected to spend over \$2bn in the next two years on new aircraft. Reuter reports from New Delhi.

Indian Airlines' managing director Kamini Chandra, told a news conference an official committee had considered the Boeing 737, the Airbus A300-B4, the Airbus A310 and Boeing 767, among the possible aircraft that the two airlines could buy.

India is looking for aircraft with a seating capacity of around 200 and is likely to take a final purchase decision by June this year.

Philippine Airlines has sold two new Airbus A-300s it had in store at the manufacturer's plant in France, Emilio Tagasa writes from Manila. PAL originally ordered five A-300s in the late 1970s but only three were delivered because the projected increase in short-haul traffic did not develop.

PAL said the Airbus were sold to an unnamed German company. The aircraft are valued at about \$35m each. The proceeds are hoped to ease PAL's foreign debt payments problems aggravated by the weak Philippine peso.

Tea Domestic Airlines (TDA) plans to order two DC 9-41 jetliners from McDonnell Douglas, a TDA spokesman said. Reuter reported yesterday from Tokyo.

Mr. Toshihiko Kobata, the TDA president, is expected to leave tomorrow for the U.N. to negotiate on the order. The company plans to introduce the aircraft around 1985, the spokesman said. TDA now possesses eight DC 9 aircraft.

Caricom to probe breaches of rules

BRIDGETOWN, Barbados — The Council of Ministers of the 13-nation Caribbean Community (Caricom) has agreed to establish a committee to investigate breaches of rules of origin for goods and other trade regulations.

Mr. Bernard St. John, the Barbados trade minister, said on Sunday.

It also urged Guyana and Jamaica, which recently devalued their currencies, to make a special effort to buy more goods from Caribbean trading partners. Mr. St. John told a news conference.

The minister said the group had held two days of very frank discussions. Reuter

Business aircraft makers see sharp growth in 1984

BY MICHAEL DONNE, AEROSPACE CORRESPONDENT

MANUFACTURERS AND users of business aircraft in the U.S. are hoping for a much better year in 1984 than in 1983, largely because of the general economic recovery, improved company profits and consequently improved spending plans.

Mr. Edward W. Stimpson, president of the U.S. General Aviation Manufacturers' Association, which represents the builders of business aircraft in the U.S., said that during 1983, "a tough and challenging year," the industry built some 2,691 business aircraft, worth nearly \$1.5bn (£1bn), or 36.9 per cent fewer aircraft and a 26.5 per cent lower value than in 1982.

During 1984, however, the industry—which also provides most of the business aircraft for the rest of the world—hopes to make a comeback,

stimulated by the advanced technology and improved operating economy of the industry's new aircraft designs.

Mr. Stimpson said that the U.S. industry expected to deliver 2,245 aircraft during 1984, or 21 per cent more than in 1983. The value of these aircraft would reach \$1.7bn, or about 16 per cent more than in 1982.

This figure would be divided as 11 170 business jets, 375 turbo-prop aircraft, 500 twin-engine piston aircraft, and 2,200 single-engine piston aircraft.

Out of the 1983 total of 2,691 aircraft delivered, worth nearly \$1.5bn, exports accounted for 19.8 per cent of the shipments and 21.7 per cent of the value.

While in some past years, exports have accounted for

U.S. GENERAL AVIATION MANUFACTURERS' 1983 RESULTS*

Manufacturer	Complete aircraft delivered	Net billing price (\$ millions)
Beech Aircraft	402	250
Cessna Aircraft	1,219	342
Fairchild Aircraft	39	77
Gate Learjet	45	198
Gulfstream Aerospace	71	436
Lake Aircraft	28	3.2
Maula Aircraft/Maula Air	36	1.6
Mooney Aircraft	154	na
Piper Aircraft	661	135
Schweizer Aircraft	27	2.4
Total	2,691†	1,469

* Excluding military deliveries, helicopters and gliders, na not available. † Includes nine units and \$2.24m from Ayres Corporation.

over 30 per cent of the U.S. general aviation manufacturers' production and dollars. Mr. Stimpson believes "that for 1984 exports will remain at the 20 per cent-or-lower level because of the continued world-wide recession and depressed economy."

"The strength of the dollar

Japanese win Singapore MRT contract

By Chris Sherwell in Singapore

A CONSORTIUM linking the three Japanese electrical giants Hitachi, Mitsubishi and Toshiba has won a contract worth \$538m (£184m) to design, supply and install the air conditioning and ventilation system in Singapore's \$585m Mass Rapid Transit (MRT) metro system.

The MRT Corporation said in an announcement yesterday that HMT Consortium had beaten five competing contractors through the quality of its design with its strong emphasis on safety and "an extremely attractive U.S. dollars financing package through which the effective cost of the contract was reduced substantially."

Also important was HMT's experience in other countries, notably on Hong Kong's metro system, for which it also won the environmental control contract.

abroad has continued to hurt our competitive position, while making imports coming into the U.S. more competitive. Meanwhile, restrictive trade practices continue in a number of countries throughout the world, particularly in some of our best export markets."

abroad has continued to hurt our competitive position, while making imports coming into the U.S. more competitive. Meanwhile, restrictive trade practices continue in a number of countries throughout the world, particularly in some of our best export markets."

How to drive a car on sugarcane.

Take ordinary baker's yeast, add it to extracted sugar juice, and leave it to ferment. The result is ethyl alcohol. The residue fibre, left after sugar extraction, is used to raise energy for the entire process.

100 years ago Henry Ford designed his first car to run on ethyl alcohol. However, since gasoline was cheap and easy to produce, alcohol was "forgotten" as an automobile fuel.

Alfa-Laval, leaders in biotechnology, have found a new way to produce ethyl alcohol. Known as Biostil, it is a closed process — energy saving and easy on the environment.

It's being put to work in Brazil, a country which has quickly established itself as the world's leading producer of "green gas" — automobile fuel made from agricultural products.

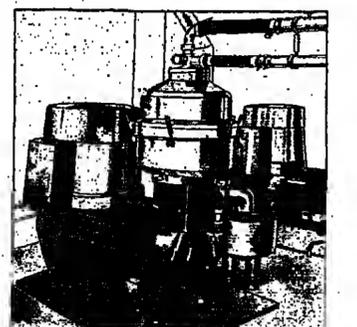
In fact, by 1985 Brazil will have a million cars running on green gas — produced primarily from the country's gigantic sugarcane plantations.

Crucial to this programme are Alfa-Laval's yeast separators and heat exchangers. And not just in Brazil, but in plants throughout the world where ethyl alcohol is being produced.

Green gas is an environmentally acceptable substitute for oil: today, a decade after the onset of the oil crisis, cars in the United States are beginning to run on "gasohol" — nine parts gasoline and one part ethyl alcohol.

Devising a way to drive a car on sugarcane is typical of our innovative way of solving problems: all over the world we are finding new applications for well-proven Alfa-Laval product lines.

Ultimately, our aim is this: to find environmentally safe and cost effective ways of supplying the world's food and energy needs. This, we feel, is potentially the world's next major growth area. In other words, we are creating new markets from great ideas.



The Growing World of Alfa-Laval
Alfa-Laval employs 18,000 people in 35 countries and its annual turnover of US\$1,100 million (a 13% increase over 1981) represents 10 consecutive years of growth. 87% of this turnover was derived from sales outside Sweden. Over the past five years, dividend growth rate has averaged 11.1%. Today Alfa-Laval's products and processes are solving problems in 125 countries and in over 170 industries — from energy production, environmental control and food processing to resource recovery, agriculture and chemical engineering.



Europe - Americas - Middle East - Africa - Asia - Australasia

For a closer look at the world of Alfa-Laval, please write to: Public Affairs Group Staff, Alfa-Laval AB, PO Box 500, S-147 00 Tumba, Sweden.

Creating new markets from great ideas.

مركز الصداقة

India plan
\$2bn order
for airline



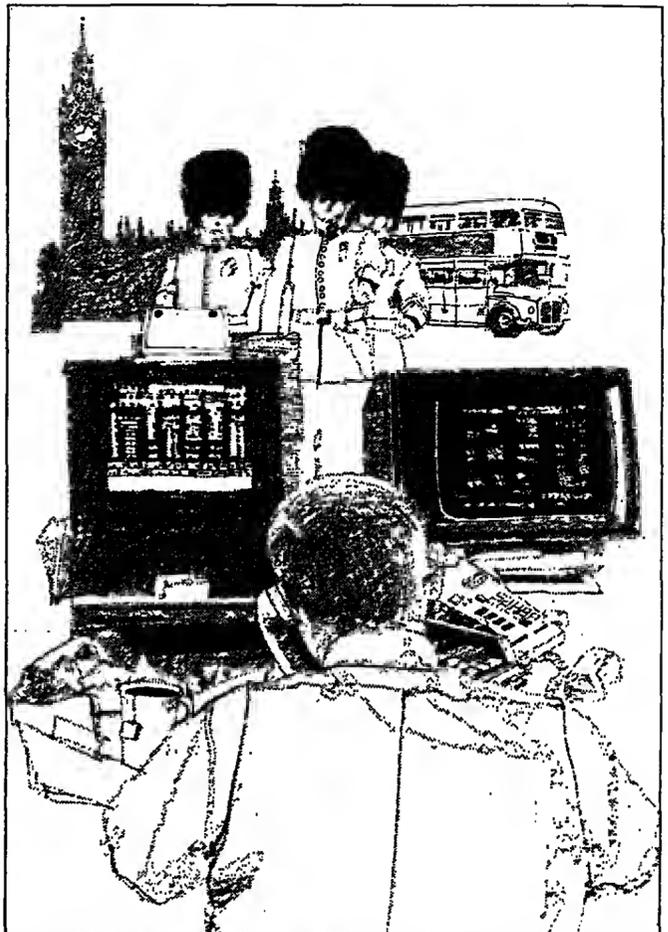
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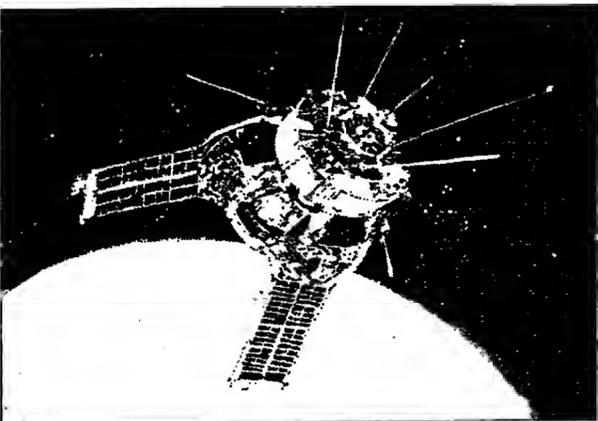
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UK NEWS

Unions may offer safeguard to prevent security centre ban

BY PHILIP BASSETT, LABOUR CORRESPONDENT

UNION LEADERS yesterday made clear to the Government that they were ready to examine measures to safeguard security at the top secret radio monitoring centre at Cheltenham, Gloucestershire.

Civil Service union officials, accompanied by Mr Len Murray, general secretary of the Trades Union Congress (TUC) are meeting Mrs Margaret Thatcher, Prime Minister, in London tomorrow to discuss a ban on union membership at the centre.



Mr Murray: 'onslaught on union rights'

The Government believes the ban is necessary for reasons of national security, and wants to prevent a repetition of industrial action which in the past has disrupted work at Cheltenham. Employees have been offered £1,000 as compensation for giving up all trade union rights.

Times in fresh bid to settle strike

TALKS between the management of Times Newspapers in London and leaders of the print union Sogat 82 start today with neither side optimistic about a quick breakthrough.

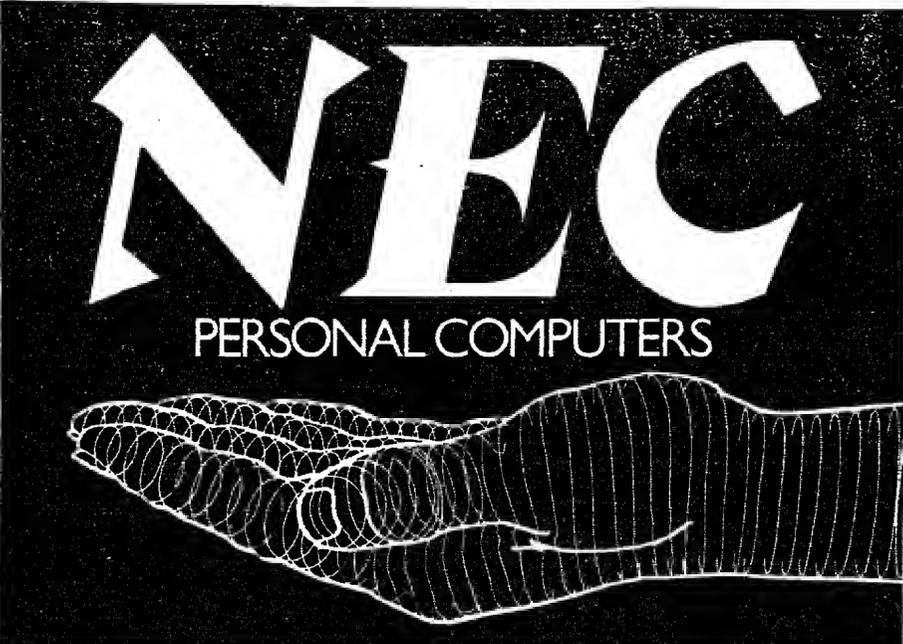
The dispute over the re-allocation of managerial duties in the papers' library has stopped production of both The Times and the Sunday Times since Friday of last week.

Hodge bank applies for shares listing

BY ALISON HOGAN

COMMERCIAL Bank of Wales, which was founded by Sir Julian Hodge in 1971 has applied to the London Stock Exchange for a listing of its shares planned for April.

appealed against the decision and in 1983 the bank was granted full recognition. Mr Malcolm Thomas, chief executive, said: "One of the principle problems in gaining recognition was our lack of provision of finance for foreign trade, a side of the business we have now built up. We are operating from a much more stable base than we were four or five years ago."



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Audi Finance N.V. advertisement featuring Audi logo, 'AUDI FINANCE N.V. Amsterdam, The Netherlands', 'DM 150,000,000 7 3/4% Bearer Bonds of 1984/1994', and a list of participating banks including Commerzbank, Bayerische Vereinsbank, Credit Suisse, etc.

Life Assurance and Financial Planning advertisement for the 'NEW 1984 EDITION'. It includes the title 'LIFE ASSURANCE AND FINANCIAL PLANNING for the professional adviser', publisher 'FINANCIAL TIMES BUSINESS PUBLISHING', and a list of topics such as 'WILLS', 'PARTNERSHIP TAX PLANNING', 'INCOME TAX AND CAPITAL GAINS TAX', etc.

TECHNOLOGY

EDITED BY ALAN CANE

NEWS AGENCY LOOKS TO SPACE COMMUNICATIONS

Reuters eyes the satellite way

BY PETER MARSH

REUTERS, THE fast-growing news agency, is considering an experiment in satellite communications as a way of distributing financial information in Europe.

Spurred by its success with satellite links in the U.S., the company may send information to subscribers in Europe via one of the new generation of space vehicles, the ECS-2 craft that is to enter orbit later this year.

Signals carrying financial and business data would be relayed by the spacecraft to antennas in regional centres in Western Europe.

From here, the signals would travel by telephone lines to subscribers' premises.

The plans are still at an early stage and depend on negotiations between Reuters and national post and telecommunications administrations.

Reuters sends information electronically to about 40,000 terminals on customers' premises in Europe, Asia and North America. Most of this information is sent by high-speed land lines.

But in recent years the company has successfully introduced satellite services to customers in the U.S. Here, the company has set up about 1,000 small "dish" antennas on office roofs.

These aerials, about 70 cm in diameter, receive financial in-



Hugh Rutledge

With electronic news already well established, Reuters use of satellites could give it a more economic way of transmitting data around Europe.

formation directly via a geostationary satellite. The service, introduced less than two years ago, cuts out the use of land lines.

As a result, Reuters can distribute data more economically, particularly in remote parts of the country.

This application of satellites follows an earlier Reuters service, introduced in 1978, that sends data via an RCA satellite to six regional centres. From these points, the infor-

mation is channelled to customers' terminals by cable.

Reuters' new "small dish" system has spent good business for Equatorial Communications, a company in California that leases transponders on satellites and then re-sells them to organisations such as news agencies.

Associated Press and United Press International, as well as Reuters, rent communications hardware from Equatorial Communications in this way.

The Californian company, which started operations only two years ago, handles the flow of data to about 10,000 small antennas for offices throughout the U.S.

Sales have increased from \$8.6m in 1982 to an estimated \$17m in 1983. Growth has been so rapid that Equatorial Communications wants to launch in 1987 two satellites entirely for its own use.

At present the company has leasing arrangements with Western Union and Hughes Communications, both of which operate their own spacecraft.

Dr Edwin Parker, a director of Equatorial Communications, says he "sees the potential" of small-dish business services in Europe.

But he says the shortage of high-power satellites for Europe may delay such schemes.

Crucial tests approach for cable TV

WHEN ENGINEERS make something possible, if it is really important three other phases will follow. The politicians will find ways of exploiting it, the economists will wrangle with statistics to test its viability, and last of all — if it survives these hurdles — others must move in to make it work commercially. Such has been the continuing saga of cable television in Britain, and only now is that final and crucial commercial stage arriving.

In recent weeks the newly-expanded cable TV industry in the UK has been in a flurry of activity, suddenly faced with making the technology and the programming promises a working reality. For the cable operators, especially the 11 franchised for new installations, the engineering task alone is daunting enough — with cabling, switchgear, head-end equipment and subscriber converters for TV sets all due to come on stream in the coming months. Rediffusion, even for its existing 53 networks now about to be up-graded, has already placed initial orders for \$6m to cover satellite receiving dishes, control desks and a host of other TV equipment.

It is, however, the commercial challenge which now moves to the centre of the stage. Not only do the operators have to instal the service, they also have to sell it to the television viewing public, programme it and also find additional sources of revenue through advertising.

Recognition of this commercial emphasis came last week with Rediffusion's announcement that a recruiting drive is being launched by the group for 1,700 new staff. Although not all of these jobs will be permanent, the significant point is that 1,300 of the total will be "salespersons."

As an executive from Thorn EMI recently said — "every one involved in the cable business in any way has to be a marketing person." The reasons for this are simple. Some forecasts reckon that for new UK cable operators to return a profit in their guaranteed life span (12 years for some) they must reach a minimum take-up rate of 30 per cent of households in their area — probably even 50 per cent. Cream on the top might be advertising revenue.

There is, however, another

one of those transatlantic words creeping into the vocabulary to disturb the cream and worry the commercial people — "churn." This is the turnover in subscribers, the defaulters who fail to remain loyal to the service. In the U.S., some research has claimed churn rates — that is disconnections — between 3.9 per cent to as high as 13 per cent per month. Conventional magazine publishers would go into a coma if faced with such figures.

It comes as no surprise, therefore, to find that the cur-

Video & Film
By JOHN CHITTOCK

It is the commercial challenge which moves to the centre of the stage

rent activity in acquiring programmes for the new services is dominated by price sensitivity. Whole programme channels are being signed up by operators at rates generally from 10p to 25p per subscriber per month — and some of these channels will provide as little as three to four hours per day, repeated perhaps two or three times.

It is now that the commercial pricing policies have to be hammered out — setting standards of practice where none existed before. On the premium service channels running feature films, a different strategy is emerging. The operators are generally agreeing to share subscription revenue for these channels with the programme providers on a 50/50 basis — probably pitching the subscriber rate at up to £5 per month (over and above the basic service charge which may range from just under £5 per month upwards, depending on the local service provided).

For the 11 new operators, who will provide many more channels than the four generally available on existing

systems, extra services for additional payments will be offered — such as the games channel from W.I.L. Smith.

Nonetheless, the pressure to keep prices down is such that many channels will look instead to advertisers to boost revenue. Some bought-in channels acquired by operators will come complete with advertisements sold by the channel provider — but allowing scope for local advertisements to be sold by the operator.

Last week's news that the government will not require operators to limit advertising time to the six minutes per hour imposed on ITV may be of little comfort.

Cable operators are still discussing the actual advertisement rates but generally the principles established for broadcast TV will apply, based on audience size.

In the current commercial activity, it is important to emphasise the two kinds of cable TV service involved. With its fondness for enlarging our vocabulary, the industry has designated them "up-graded" and "new-build." The former are existing networks which until now have relayed broadcast TV (and in some cases feature films under the terms of a limited experiment sanctioned by the Home Office). The latter are the new networks which must provide greatly extended services and will not begin to come on stream until 1985.

Up-graded services are starting in some areas any time between now and March. Subscribers who have been receiving broadcast TV via cable will be provided with free aerials and generally have four new channels available on the old cables. Thorn EMI are offering channels devoted to music, feature films, children and teletext/teleshopping. Rediffusion similarly offer music and films, plus the general entertainment Sky Channel from SATV and Screen Sport's Channel.

At this stage, the government's hopes for a boost to the economy, and to technology, are being realised — in an extraordinarily short time. But to ensure that none of this occurs at the expense of the investors, the marketing men must do some hard trail-blazing in the wake of the engineers.

FACTORIES

IN 2001 A.D.

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Measurement

Automatic changer

THE PROBES used in coordinate measuring machines made by Carl Zeiss can now be changed automatically, in the fashion of the automatic tool changers used in modern machining centres.

Using the equipment, which is available for retrofitting from Hahn and Kolb, Rughly, the measuring machine becomes able to inspect a mix of different products without manual intervention.

The probe changing device is based on a magnetic coupling in the probe head which allows the head to grip or release a probe under program control. Recalibration after a probe change is said to be unnecessary. The system can handle arrays of probes as well as single devices.

Workpieces are placed in holding devices on the table of the machine which can then inspect them automatically, using data drawn from the controlling computer. The machine could therefore run unattended, say at night when the workforce has gone home. More on 0788 74261.

Medical

Ultrasonic eye-scanner

HARWELL has developed an ultrasonic imaging and recording system for the ultrasonic eye scanner at the Moorfields Eye Hospital.

It displays the ultrasonic images of the eye onto a standard television screen. This is then recorded on a standard videocassette recorder.

Such recordings can then be stored for later analysis, used as a guide during surgery and used as reference for treatment sessions. In addition it can be used as a teaching aid by the hospital.

WHITECHAPEL WORKSTATION

GLC backs UK computer company

DUE TO be launched in February is a powerful 32-bit computer workstation with a price tag more suited to a machine in the personal computer category, about £5,000.

Whitechapel Computer Works, a hardware manufacturer based in London's East End, is producing the machine. The company, which has been in existence since the end of May last year, owes its birth at least in part to the Greater London Council.

Funding from the Greater London Enterprise Board (GLEB), created by the GLC early last year, enabled the firm to start up. GLEB invested £100,000 and now owns a 30 per cent equity in the com-

pany. WCW, however, is now going out for second-round financing to coincide with the launch of the machine.

The workstation is designed

The company owes its birth, at least in part to the Greater London Council

to be as powerful as ICL's Perq or Rank Xerox's Star, but has a much lower price tag. Initially it is aimed at the scientific and technical user. It is based on the National Semiconductors' 16032 chip, which gives it full 32-bit arithmetical capability. Integral to the machine is a

half-megabyte user RAM, a floppy disc and a 10-megabyte hard disc.

The machine is being referred to as "a personal workstation"

and its makers believe it to be the first of a new generation of machines which are priced at the top end of the personal computer bracket but has the capability of a powerful graphics workstation.

GLEB still retains close contact with WCW through Andrew

Hartwill, an executive in GLEB's technology division, who is also a non-executive director of WCW. Mr Hartwill said the launch of the new machine "demonstrates our (GLEB's) commitment to fostering new-technology manufacturing in London. Whitechapel have themselves demonstrated precisely the viability of this concept." He added that GLEB hopes not only to have created jobs by funding the concern, but also to continue to learn about the computer marketplace from its sustained contact with the young firm.

WCW employs seven people but it hopes to grow to a workforce numbering 70 by the end of the fiscal year 1985-86.

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هكذا صدقنا

THE ARTS

London Galleries/William Packer

Face to face with the famous and notorious

Our great collecting institutions forever face the unenviable chore of trying to square the unobtainable. Charged with the public duty of extending and enhancing their particular collections, as policy and chance strike direct, and with funds always so much less than adequate as to be quite unrealistic, they contrive more or less judiciously to squeeze the pint into the quart pot, which by degrees, eventually fills up. What would we really have if we stopped collecting altogether, and left to a thankful posterity finite collections, with gaps impossible to fill, and thus whole fields of continuing humane speculation impossible to serve? Even disperse what we already have, on the convenient but mendacious egalitarian principle that it would thereby be so much more readily accessible? Give it back, abroad, which is the ignorantly mischievous answer to a particular topical question? As always, the word of authority is: these are difficult times, so shift for yourself the best you can. But no party, even in better times, has ever dared risk votes on art or culture, and implicit promises for the future have a hollow ring. All educated opinion agrees that what is currently proposed would in practice make things very much worse: which brings us to present shifts and strategies. The National Portrait Gallery, like the Tate, is bound to monitor the immediate quite as much as the remote past, and like the Imperial War Museum, has to extend its scope beyond what is simply the best of its kind to what is relevant, interesting, informative, apropos. It will naturally wish to acquire whenever possible true works of art, and it does indeed hold many fine and beautiful things, but other material of all kinds that falls within its brief — pottery, material relating to any individual who has made a notable contribution to our national life — is their necessary complement: press photographs, snapshots, cartoons, caricatures, amateur portraits. There has never been a proper



John Minton, Self-Portrait 1953, and Dame Laura Knight, Self-Portrait 1913, both from the New Twentieth Century Display at the National Portrait Gallery

display of the 20th century material, a fraction of it in the basement for a while, and more lately in halls and landings here and there. But now that the principal exhibition gallery on the top floor is in use, and the pressure on the other temporary showing spaces eased somewhat, the choice has been taken to reorganise, in whole, the post the suite of galleries at the top of the entrance stairs has been given over to a permanent showing of the most important 20th century hang. The display is now up and running, which last week I use advisedly, for a principal feature of the installation is the use of turntables, 13 of them, each carrying four distinct groups of works. Exhibition design is a new and doubtful discipline, but nothing that it perpetrates, however objectionable, is irreversible. Here the arches and arcades are perhaps a shade overbearing, the alleys a little narrow, some of the pictures hung a bit high for comfortable viewing, and the moveable feast is disconcerting, to say the least, when the light first goes out and the wheel turns. But we get used to its little ways soon enough, and even forgive it for having no hold button to allow extended consideration, who is to say that the technology will not at last catch up with the idea. There they all are, the famous and the notorious, the talented and the distinguished, in their professional groupings, coterie, categories: athletes, poets, scientists, lawyers, film stars, actors, politicians, painters, soldiers, musicians, dancers, lords and ladies. The few who have an enclave to themselves, and Dame Edith on tape, Face to Face with John Freeman; Ellen Wilkinson strides through Crickwood with the Jarrow marchers; Stanley Matthews signs his autograph, outside the changing room door; Beatrice Webb sits on the doorstep for her photograph by Bernard Shaw. The interest is as broad in scope as it is fascinating in detail, each item well chosen and to the point. Inevitably, where all are equal as worthy subjects for



the collection, some are rather more equal than others as art, and the more substantial works of art command attention by right, whoever the subject: Virginia Woolf a ravishing young woman of 20 in her photograph by George Beresford in 1902; or Vivien Leigh nearly 50 years on and quite as beautiful, by Angus McBean. But the painters have an advantage, those who paint themselves, perhaps, most of all. The Gallery has lately acquired an extremely fine double portrait of Maynard Keynes with his wife, the ballerina, Lydia Lopokova, in 1932, by William Roberts, as strong and unmannered painting as he would ever make; but even that

Margaret Price/Covent Garden

David Murray

Miss Price appeared on Sunday in the Celebrity Concert series with the programme of an international gladiatrix: mostly big songs, nothing experimental or out-of-the-way (unless you count Mozart's "Little German Caecilia," which I think has been a Price party-piece for a long time)—simply a generous selection of the best most sung by top singers these days. She was in superb form. The front-stage platform at the Royal Opera didn't enhance the bloom of her full, rich soprano, but perfect control and expressive vitality made their effect anyway. Even her penchant for singing from the score didn't get in the way. After Mozart's Masonic hymn to brotherhood, delivered with sustained fervour, Miss Price gave us Erasmus, Strauss and Mahler. Contrary to expectation, perhaps, her Brahms wasn't at all a matter of chilly poise; there was cheerful Brahms and robust Brahms, affectionately rendered, and at the end of the group two songs of feeling—"Mitternacht" and "Der Tod, das ist die kühle Nacht"—which she made exquisitely poignant. She did exact justice throughout to Brahms' formal sonnet-shapes, regularly taking her interpretative point of departure from them which bespeak the thoughtful Brahmsian and not simply from the sentiments in the words. Her Strauss and Mahler were just as rewarding. The piano sounded dry; partly the hall, partly the instrument, partly the pianist—but James Lockhart was always acutely sympathetic with his singer, even if he supplied some of the way of romantic sound-cushions. Of Strauss, "Du meinest Herzens Krönlein" was melting and unabashed, "Morgen" wonderfully intense. Miss Price's Mahler consisted of the five late Ruckert Lieder (omitting the military vicereines), of them glowing; perhaps the "Linden Duft" song ended irresolutely, not quite rounded off, but "Um Mitternacht"—very difficult to bring off without its dark orchestral support—was a tour de force. The Celebrity Concerts are rarely so polished and satisfying.

Music of the Andes/Shaw

Andrew Clements

The excellent World Arts Season presented by Arts Worldwide and the Borough of Camden continued on Sunday at the Shaw Theatre with a suite by Erasmus, Strauss and Mahler. Contrary to expectation, perhaps, her Brahms wasn't at all a matter of chilly poise; there was cheerful Brahms and robust Brahms, affectionately rendered, and at the end of the group two songs of feeling—"Mitternacht" and "Der Tod, das ist die kühle Nacht"—which she made exquisitely poignant. She did exact justice throughout to Brahms' formal sonnet-shapes, regularly taking her interpretative point of departure from them which bespeak the thoughtful Brahmsian and not simply from the sentiments in the words. Her Strauss and Mahler were just as rewarding. The piano sounded dry; partly the hall, partly the instrument, partly the pianist—but James Lockhart was always acutely sympathetic with his singer, even if he supplied some of the way of romantic sound-cushions. Of Strauss, "Du meinest Herzens Krönlein" was melting and unabashed, "Morgen" wonderfully intense. Miss Price's Mahler consisted of the five late Ruckert Lieder (omitting the military vicereines), of them glowing; perhaps the "Linden Duft" song ended irresolutely, not quite rounded off, but "Um Mitternacht"—very difficult to bring off without its dark orchestral support—was a tour de force. The Celebrity Concerts are rarely so polished and satisfying.

The Man of Mode/Richmond

B. A. Young

The Orange Tree shows its usual courage in playing a Restoration comedy on a stage like a postage stamp, with one single item of scenery that is a lady's dressing-table one way up and a hiding-place for a person another way up. Etherege's comedy, in this production under Sam Walters, has lost some of its fire, and seems to rely just on the simple comedy of the plot, which is like a game of draughts, where one piece is brought up against another and either takes it or is taken. The satire has leaked some away. After Tom Geogerson as Dorimant, and Christina Greaves as Mrs Lovell have played their last scene together it seems natural, almost bonest, that he should marry the innocent country girl Harriet, though any Regency couple could tell you that he'd be back in the Mall within a fortnight. I think Mr Geogerson is too severe, too much weighed down by his life of sexual deceit. I'd have liked a sign of the beau who had every woman at his feet, who punctuates his lines with quotations from the poet Waller (Mr Geogerson makes them sound like ecclesiastical texts)—possibly even a hint of

Keeping the theatre alive in the North West

Any play that starts as it means to go on, with an exposition of the Special Theory of Relativity delivered by its formulator with the help of red-nosed clowns, deserves avid admiration. Seriousness of purpose almost redeems the subsequent impression of an apocryphal Einstein theory: Brecht plus Schools Broadcast didacticism over three hours equals boredom. Act I of Norman Leach's The Life of Einstein (The Duke's Playhouse, Lancaster) is a crash course in the physicist's early theories and unrecognised genius. Act II expands the political background of the interwar years. The last act—and a long evening is not quickened by false endings with such film-projected character readings as "Einstein's 'Epi-logue'" and "Einstein's Last Words"—focuses on the scientist's attitudes to atomic power and the Cold War. Throughout, the cast of six retire to onstage changing-room benches, ringing variations on their basic wardrobe of white shirt and dark trousers to assume an epic range of parts. The exception is Janice Jarvis's Rosa Luxembourg whose presence haunts Einstein like a conscience, comforting, arguing and exhorting. Despite emphasis on the great

man's desire to "learn something of humanity, that other mystery," he remains less alive than his background or his achievements. No back-handed compliment intended, but Paul Bradley's Einstein is strongest when silent. When not pontificating (rarely) he passes with honour the good actor's acid test of knowing how to listen convincingly. Apart from chunks of neat theory, we are treated to politicians in carnival heads conversing in doggerel ("It's those Spartacists I hate/I like my socialism moderate.") By the last act the rhymes, witless beyond the call of satire, merely grate. Infinitely more shocking are historical facts reported straight: a Nazi prosecution against when silent. When not pontificating (rarely) he passes with honour the good actor's acid test of knowing how to listen convincingly.

Martin Hoyle reports on two new openings in the north west which show the theatre defiant in the face of financial cutbacks

so radically. And if the ghost of Rosa Luxembourg, frozen in the attitudes of 1919, is all the author can conjure up to represent either human interest or a valid alternative ideology, he is either cheating or no more convinced than we are. All praise to the integrity of Lancashire's only repertory theatre in dealing with the man who "undermined our universe." This clubby art centre's future is in financial jeopardy, even coverage in its catchment area of Morecambe whose correspondents sometimes recall the

tone if not the language of Brass. Much depends on Lancaster's Tourist Committee, a body that wears its responsibilities lightly, as lightly—to judge from the "closed" signs that greet the hapless winter visitor—as the Emperor's new clothes. I refer them to a letter in the local paper that asserts the town

On the central podium the striking-looking black rigger-master cracks his whip like something out of Lulu. The company enters as a parade of clowns. On trundles the grey-skinned Ariel in a giant hamster's wheel; the young lovers are suspended in a skeletal crescent moon high above the action. Actors awaiting their cues sit round the ring adding to the isle's noises by humming or playing instruments. Textual cuts can be condoned, given the Everyman's predominantly young audience and, less pardonably, the unevenness of delivery that extends to a Ferdinando more expressively on clarinet than vocals. Purely verbal irony is skated over and too often the verse is simply blank: a feeling for the rhythm would have precluded Carlan's insertion of an extra word into his "sweet airs" speech. Significantly, Stuart Organ, with RSC experience, contributes a clearly-spoken and therefore intelligent old Gonzalo. Riccio Ross, from TV's Hill Street Blues, is a vigorous young Prospero whose writing before the conspirators' plot suggests the inner torment of long self-exorcism come to fruition. When happier with his clipped portucian English, he may deepen this sombre interpreta-

Arts Guide

Music/Monday. Opera and Ballet/Tuesday. Theatre/Wednesday. Exhibitions/Thursday. A selective guide to all the arts appears each Friday.

Opera and Ballet

LONDON Royal Opera, Covent Garden: The Revival of Wozzeck is cast at strength — Jose van Dam, Anja Silja, James King, Donald McIntyre — and conducted by Christoph von Dohnanyi with power and eloquence. La Boheme returns with the Hungarian soprano Ilona Tokody (Royal Opera debut), José Carreras, and Thomas Allen, and the highly gifted American conductor John Mauceri in charge (2401068). English National Opera, Coliseum: A most gripping and beautifully sung Turn of the Screw, with particularly distinguished contributions from Jill Gomez and Philip Langridge, alternates in repertory with La Traviata, in which Nelly Miricioiu introduces to London her fascinating, vocally lustrous heroine (2383161). Sadler's Wells Theatre: The New Sadler's Wells Opera continues its latest season with a new production of Flotow's Martha and a revival of last season's Countess Mariza (2388018). Royal Opera House, Covent Garden: The Royal Ballet in La Fille mal Gardée (Tue).

by Giorgio Strehler, decor and costumes by Luciano Damiani, coproduced with La Scala, Milan. Michael Heintz as Pacha Selim and Catherine Malfitano as Constanza, alternate with the three-act ballet Le Fantôme de l'Opera, conducted by Marcel Landowski/Claude Schmitzler, choreography by Roland Petit, music by Marcel Landowski. Decor by Giulio Castellacci at the Paris Opera (7425750). Khovanshchina, conducted by Woldemar Nelsson, produced by Pier Luigi Pizzi, chor conducted by James Johnson, Orchestre Colonne in the Grand Théâtre de Genève production with Maia Pissotskaja's participation. TMSP-Châtelet (2334444). Ariadne's Ut, with Carlotta Ikeda as soloist, choreography by Ko Murabuchi. An exclusively feminine ensemble in a brilliant demonstration of the Ballet Danse is followed by a repertory of Ballets Danse Theatre at the Theatre de Paris (2309530). Wrocław's Pantomime Theatre in King Arthur's Legend bridges medieval and modern times at the Theatre de la Ville (2742277). Le Roi Malgré Lui — o 3-act Opera-Comique, with Charles Dutoit conducting. Le Nouvel Orchestre Philharmonique, Barbara Hendricks, Christine Ede-Pierre and Gino Quilès in the title roles (Thu). Theatre des Champs Elysees (7834777).

NEW YORK Metropolitan Opera (Opera House): The first performance of Stravinsky, conducted by James Levine with sets by David Hockney, accompanies a week's performances of Riccardo conducted by Mario Bernardi and starring Marilyn Horne, Le Traviata with Kiri Te Kanawa, and Peter Hall's production of Macbeth, premiered last season with Renata Scotta as Lady Macbeth and Sherrill Milnes as Macbeth, Lincoln Center (2809830). New York City Ballet (New York State Theatre): The company's season of mixed repertory includes performances this week of Western Symphony, Afternoon of a Faun, and Concertino. Lincoln Center (8705370). WEST GERMANY Berlin, Deutsche Oper: To mark the 100th anniversary of Wagner's death, a world premiere of "Riccardo W" is offered this month. It is choreographed by Valery Fyavov, danced to music by Richard Wagner. Giacomo Meyerbeer, Felix Mendelssohn-Bartholdy and Hector Berlioz. Soloists are Eva Evdokimova and Thomas von Caemmerberg. (Fri). Der Nussknacker, choreographed and danced by Rudolf Nureyev. His partner is Eva Evdokimova (Mon).

Peter O'Hagan/Purcell Room

Andrew Clements

To his enterprising and nicely contrasted programme in the Purcell Room on Wednesday Mr O'Hagan proved a generally solid if unexciting guide. Boulez's piano music has by no means yet become a regular feature in recitals, and his third sonata is the rarest visitor of all. Yet Mr O'Hagan made it the main work in his first half, or rather those two fragments of it, "Trope" and "Constellation-miroir," that the composer permits to be performed. It remains a challenging proposition for any pianist, technically and intellectually. Mr O'Hagan was only partially equal to it, for while he gave a good enough account of the bones of the sonata, he did not convey anything of its real character or give any reason why he should have (quite justifiably) included an extract from Malmarmé's "Un coup de dés" control told most of all; the clusters of scintillations that decorate the main paragraphs of "Constellation-miroir" glinted in his programme note. The fluidity, the quicksilver changes of mood and colour that aleatoricism introduces were all missing. A lack of textual only dully, while the haloes of bsmronics were lifeless. Monochrome pointing and stodgy rhythms also deprived Bartok's Suite Out of Doors of

Saleroom

Antony Thorncroft

Eleven Impressionist and Post Impressionist paintings from the estate of Erna Wolf Dreyfus and Julius Wolf are to be sold at Sotheby's in New York on May 15. The saleroom is expecting the collection to make in excess of \$12m. Works by Gauguin, Van Gogh and Degas are included, as well as four by Renoir, and paintings by Manet, Mooet and Toulouse-Lautrec. The attraction of the auction is that the collection was assembled around 50 years ago and the paintings will be fresh on the market. Given the current strength of demand for Impressionists, the prices could be much higher than Sotheby's estimate.

Swiss Luxury Apartments advertisement with contact information for Davoser Immobilien AG.

Advertisement for Distressed Gentlefolk's Aid Association, featuring a photograph of a woman and text about financial assistance.

THE MANAGEMENT PAGE: Small Business

NatWest's 'flying doctor' service

LIKE IT or not, UK banks have been forced to rush to the rescue of hard-pressed companies during recent, tough years. Most have set up fee-charging business advisory services or intensive care units.

NatWest, the UK's second largest bank, by contrast, has set up a free flying doctor service: teams of bankers and accountants who call on troubled clients and try to help them get a grip on their problems.

"We find there's a crying need for the kind of help bankers and accountants can give," says John Melbourne, assistant general manager of the domestic banking division.

In the three years since it was started, the service, which goes by the bland name of the industrial unit, has grown to seven teams each consisting of a NatWest banker and an accountant on secondment from an accounting firm. Six of the teams are based in London, one in Manchester.

When cheques start bouncing or a client shows other signs of stress, a team visits the firm, spending three or four days sorting through the books and putting together a picture of the business. It then goes away and prepares a report with recommendations.

"We can get a lot more detail than the branch manager can," says Tony Hennessey-Brown, the manager of the unit. "People see us as independent investigators."

Invariably, the problem turns out to be poor financial controls, and the NatWest men try to advise on how they can be tightened up. But in one case they turned up evidence of

large-scale pilfering that the manager was not aware of, even though he was bothered by constant budget overruns.

NatWest's interest in providing the service is to protect its loans. But it also hopes to improve client relationships by doing something that is beyond the scope of the branch manager.

A typical client for the service has a turnover of between £1 and £15m and several million pounds of debt. At the moment NatWest is getting about 140 cases a year, and its "response time" to a call—which usually comes from a branch manager—is four to eight weeks.

When the job is done, the service "fades into the background," says Hennessey-Brown. But about 30 per cent of the clients do not make it through the first time and want the flying doctors back. If the case is hopeless, of course, a drastic solution may be required which is beyond the unit's scope.

Not all the clients are necessarily in deep trouble. Some may just be growing too fast and are in need of a bit of financial education, but they are in the minority.

NatWest started the service, Melbourne says, partly because it was worried that fee-charging advisory services posed conflict of interest problems. Could NatWest be both a disinterested adviser and a lender? And one problem was to get the flying doctor service accepted within NatWest itself. But branch managers who might have resented its special role now seem to recognise its usefulness.

David Lascelles

In brief...

THOSE running courses up and down the country may be interested in "That Giant Step" — a video about small business start-ups made by John Thompson of Huddersfield Polytechnic's Department of Management and Administrative Studies. It features seven quite different small businesses — ranging from a self-employed potter to the "organisation" entrepreneur — and deals with the problems faced, and advice and assistance available to overcome them. The video, which is not a teaching programme, can be obtained from John Thompson at the Polytechnic,

Queensgate, Huddersfield HD1 3DH. Tel: 0484 22288. For those with an interest in private companies or any company owner wishing to know the financial position of his competitors, Jordans has just published its latest edition of "Britain's Top Private Companies—the third and fourth thousand." It complements Jordan's "Top 2,000" and covers those companies with a turnover of between £1m and £4.7m—giving details of sales, net tangible assets, profits or losses and a range of other useful financial information. The cost is £46, from Jordan & Sons, Jordan House, Brunswick Place, London N1 6EE.

Tim Dickson highlights the importance of exporting and looks at schemes to support overseas sales

Tenacity is a necessity



David Gough (left) and Iain Croft: tough and protracted negotiations

"EXPORT OR DIE" is a stark enough choice. But a former sales director of Stockport-based Thermatic Engineering Services can claim that five years ago he almost managed to do both.

Following up a lucrative Eastern bloc contract for which the company had been short-listed, the unfortunate executive was forced to pack his bags when two plain-clothes militia men—evidently mistaking him for an imperialist spy—worked him over in the swing door of an East German hotel.

That, according to the present finance director, Iain Croft, was Thermatic's first attempt to break into overseas markets. And in the circumstances no one could have blamed the company if it had been the last.

In recent months, however, Thermatic has enjoyed considerably more good luck and, against all the odds, is now in the happy position of completing a £1.6m contract to equip seven Saudi Arabian chirpody and sun-stroke centres with fire prevention equipment and air-conditioners. (The hospitals—four at Mecca and three at Medina—are being built specially for the tens of thousands of pilgrims who flock to these cities each year.)

Besides gamely overcoming many of the obstacles facing first-time exporters—and learning some invaluable lessons on the way—Thermatic has shown that tackling an overseas market is one way, albeit highly risky, of combating recession at home. (The company is primarily a design heating engineer, and sub-contracts all manufacturing.)

It was Thermatic's sister company, Fireproof Sprinkler Systems, in fact, which ran into difficulties in the UK during 1981 and 1982. Most of its orders came from business customers carrying out instructions from their insurers to put in sprinkler systems—but when some aggressive American insurance groups entered the British market they valued this requirement turnover at FSS suddenly fell away.

In an effort to replace these sales Thermatic got itself onto the British Overseas Trade Board's "Export Intelligence Scheme," which supplies subscribers with details of overseas inquiries for products and services and calls for tender at 35p per item. As a result of a lead from this source, David Gough, an FSS salesman, travelled out to Saudi in October 1982 and, following some tough and protracted negotiations, won a £1m order for fire protection equipment for the hospitals

The company did use NatWest to confirm a guaranteed letter of credit but, as Croft readily concedes, betrayed its inexperience by "doubling up" with cover from the Government's Exchange Credits Guarantee Department. "All we were in effect getting for a 0.55 per cent premium was guarantee against civil war in Saudi Arabia, war between Britain and Saudi Arabia and NatWest going bust. Next time we'll know better."

Financing the deal, meanwhile, was not helped by the voluntary liquidation of Fireproof Sprinkler Systems last February. As a result of the cross debentures and cross guarantees Thermatic's overdraft was withdrawn and the company's credit management skills were consequently put to the test. Agreements were reached for U.S. equipment suppliers to be paid in dollars on the same payment terms as Thermatic was receiving, while payment terms were pushed to the absolute extreme with other suppliers.

"Fortunately the domestic side of the business had a very good year and by its nature generates cash. But we still had to pay suppliers for £150,000 before we got our money and in October £1m went in and out over two days at the end of which we were £6,000 in the good. It all got a bit hairy."

Discussing his experiences in negotiating the contract, David Gough stresses the difference between selling in the UK and selling in the Middle East.

"The thing about the Saudis is that they don't seem to accept what you say on price. If you stand your ground they respect you but I was staggered how some of the big companies quoting for other parts of the contract were juggling vast amounts off their quotation. The same goes for the terms and conditions—we simply were not prepared to accept some of them but when they realised that they had pushed us as far as we would go they backed down."

Thermatic is now bidding for an even bigger Middle East contract while Gough, who bought parts of FSS from the liquidator with a couple of colleagues and is now on his own, is also increasingly active in export markets.

Gough, however, cautions: "If small companies think exporting is a panacea for all their problems, forget it. We were very very lucky. Other people have spent a year or 18 months bidding for overseas contracts and got nowhere."

A helping hand

"IT'S NO good sitting back hoping someone will turn up at your factory," says Gisella Burg about would-be British exporters. "Like our overseas competitors we've got to visit other countries, display our products at exhibitions and make as many overseas contacts as we can."

Burg should know. Over the past 15 years this former The Times Veuve-Cléquot Businesswoman of the Year has built up the London-based Exportus into a successful export marketing company for professional audio equipment manufacturers. And while her energy and personality have played a vital part in the achievement, Burg is the first to pay credit for the help provided by the Government's British Overseas Trade Board, on which she sits as one of the private sector's small firm representatives. "Eighty-two per cent of the BOTB's clients have less than 200 employees," she explains, "many of the services are tailored for the smaller business. They are aimed very much at the many companies which have a good exportable idea but which lack the necessary financial resources or management skills."

Admission for the BOTB—which operates through seven regional offices in England, and the Scottish, Welsh and Northern Ireland Offices in those parts of the UK—seems to be pretty widespread but its problem in recent years has been finding suitable exporters to support. An advertising campaign and a series of conferences were launched last year but Board members are aware that more needs to be done. They hope that fresh ideas will emerge from an overall review of BOTB services for small businesses currently being conducted by Burg and Board colleague, Roy George, chairman and managing director of Celluware, based in Consett, County Durham.

BOTB activities fall into three categories—financial assistance, specific information and advice—and are detailed in a newly updated booklet available from the regional offices or its London headquarters.

The Market Prospects Service, for example, is used by companies staking up an overseas opportunity. Carried out by the Commercial Department of the relevant embassy, it consists of a report on market conditions and established competitors,

plus an analysis of the specific prospects for the product and potential exporter. The £150 fee (which includes VAT) can be refunded as a contribution towards travel costs if an encouraging report stimulates an overseas visit by the BOTB's customer.

Funds, meanwhile, are available to finance between one third and one half of the costs of export marketing research (carried out by a management consultant or group of firms) while the Export Representative Service will help find a suitable agent, distributor or importer and the Overseas Status Report Service offers assessments of these representatives.

A much neglected service is Technical Help to Exporters, under which detailed information on foreign regulations and standards can be provided. Smaller firms can get up to £100 of help free and, as a BOTB spokesman points out, can be used to avoid elementary mistakes. "We had a firm recently that shipped toasters to the Middle East but on arrival they blew up because the voltage was wrong."

Exporters visiting overseas markets as part of approved outward missions can get contributions towards their costs while financial assistance is offered to companies wishing to bring overseas businessmen into the UK.

Subsidised space is provided at overseas trade fairs and, under the joint venture scheme groups of companies in an industry can stage a special exhibition overseas of their products.

The Export Intelligence Service used by Thermatic (see other article) has initiated £10n of British exports.

The Market Entry Guarantee Scheme is aimed specifically at small and medium sized firms breaking into overseas markets for the first time or launching a new export initiative. The BOTB will advance between £20,000 and £150,000 to finance half the cost of overseas such as setting up an overseas office, hiring staff, travel expenses and sales and promotional material. In return it makes a 3 per cent flat rate charge plus a levy on sales—calculated to give the Board its money back plus interest. If the venture flops, the Board funds any shortfall in repayment.

*BOTB Services Booklet BOTB Publicity Unit, 1 Victoria Street, London SW1H 0EX. Free.

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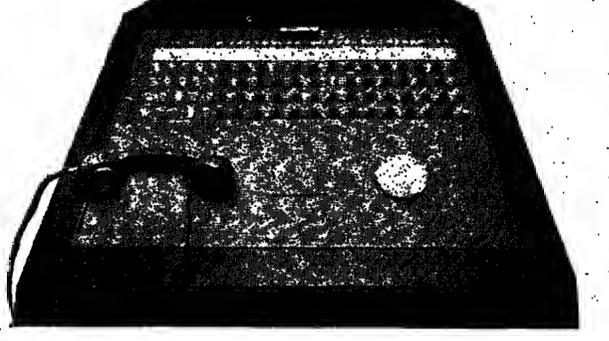
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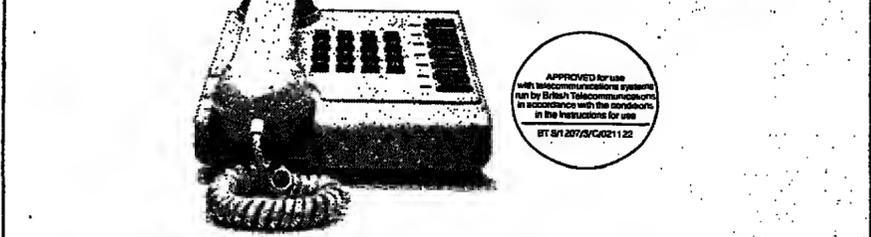
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COMMERCIAL BIOTECHNOLOGY

Where the U.S. sees the threat to its lead

By David Fishlock, Science Editor

THE U.S. has mounted a massive commercial effort to exploit biotechnology, an advanced technology which promises answers to some of the world's most pressing problems, such as disease, malnutrition, pollution and low-cost fuel. Yet it fears that Japan will repeat its success in consumer electronics and overtake the present clear U.S. lead.

Other countries are not considered to be in the running. Britain is thought to lack the "dynamism" necessary to get the best from such a broad-based technology. West Germany has problems in getting its academics behind biotechnology. France lacks the academic base needed.

This, in a nutshell, is the picture which emerges from a 60-page study of commercial biotechnology commissioned by the U.S. Congress from its Office of Technology Assess-

The hurdles that innovations must surmount

ment and presented to Congress last week. It analyses the reasons why the U.S. leads today, and the chances of the U.S. retaining the lead. Its focus is what it calls "new" biotechnology—for such biotechnology like the making of bread, beer and wine has ancient origins. New biotechnology aims to use scientific discoveries, techniques and inventions of the 1970s and since, such as the techniques of "genetic engineering".

Traditional winemaking is old biotechnology. But winemaking with a genetically modified yeast that allowed the wine to have, say, a higher alcohol content would be new biotechnology. It means building into the yeast a resistance to alcohol, which normally kills it at about 12-14 per cent. Last year, U.S. investors in the private sector put \$1bn in small groups of scientists who had bright ideas for using genetic engineering to gain greater control over some such biological system. For example, they might propose to induce it to mass-produce pure interferon or insulin, or to give plants more resistance to frost or pests. The report says availability of venture capital to start such new biotechnology firms

(NBFs), plus tax incentives provided by the Government, are very important to the development of biotechnology in the U.S. Of a total of 219 U.S. companies keenly interested in new biotechnology, it identifies over 100 NBFs started in the U.S. since 1978, many of which have already obtained second- and third-round financing. Between March and July last year, 23 of the NBFs raised about \$450m.

Partnerships for biotechnology research and development are expected to increase from \$500m last year to \$1.5bn this year. Corporate equity—although now diminishing—has also been important to the U.S. NBFs, providing over \$550m up to last August.

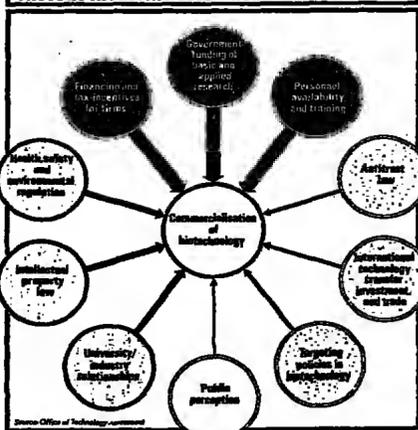
Outside the U.S., the environment is much less congenial for NBFs and few exist, it says. Venture capital has played "a very minor role in the commercialisation of biotechnology, because these countries do not have tax provisions that promote the formation of venture capital and investment in high-risk ventures."

The U.S. researchers are left with no illusions that new biotechnology is anything but a high-risk venture. Self-financing for NBFs may still be five to 10 years away, they say, such as the hurdles their innovations must surmount. This is especially true for pharmaceuticals, which 82 per cent of the 219 companies are pursuing. They say it could take \$50-\$100m to bring each new drug to the market.

Finance and tax incentives for firms are singled out as one of the most important of 10 factors affecting the commercialisation of biotechnology (see diagram). Other dominant factors are government funding of the research base—generous in the U.S.—and the supply of trained people. In Japan, the researchers found relatively little interest in NBFs, and biotechnology almost exclusively to be the preserve of established companies. Japan, they say, considers "biotechnology to be the last major technological revolution of this century." It is being commercialised there by a wide range of industries, many of which already have experience of older technologies.

Outside the U.S., Japan is the nation with most finance available for biotechnology. The Government has declared it a national priority and is backing joint company ventures. Most

FACTORS AFFECTING COMMERCIAL BIOTECHNOLOGY



Chris Walker

established Japanese companies in the field have at least one bank as a major shareholder, providing low-interest loans for R & D. Wealthy individual investors in Japan, although few in number, have also provided some risk capital.

Japanese companies began investing in new biotechnology only in 1980, in response to the overseas threat to its pharmaceutical industry. Since then, more than 150 companies have "rapidly reorganised their R & D systems, equipped research institutes, and recruited new staff to evaluate the applications of biotechnology."

In 1981, MITI announced a 10-year plan to promote "next-generation" industrial biotechnologies, focusing on bioreactors, genetic engineering and mass cell culture. It invited 14 companies to participate. MITI is providing over \$100m but 90 per cent of the R & D will be done in industry.

Five other Japanese government agencies are also funding biotechnology, and between them the Government provided \$77m last year, mostly for applied research.

The report comments on the "truly extraordinary" ability of Japanese companies to rectify shortages of skills by retraining. It found that in 1981

only 10 private Japanese firms had more than 10 researchers in genetic engineering. A year later, 52 out of 60 leading companies had reached that level.

West Germany. The study also sees Germany as a possible rival—although less so than Japan—because of the strength of the private chemical sector and recent interest shown in biotechnology. It sees the Greens as a potential threat to the progress of biotechnology led by such companies as Hoechst, Bayer and BASF, all of which have established co-operative research programmes with German (and, in Hoechst's case, also with U.S.) universities.

The researchers offer two reasons why they do not see Germany as a threat comparable with Japan. One is funding and administrative problems in German universities which reduce the quality of their research. The other is the inflexibility of Federal Government funding.

Britain: The UK has more NBFs than other European countries or Japan, but the study concludes that the large, established companies such as ICI, Wellcome, Unilever and Glaxo "will play the major role" in determining how competitive it is in biotechnology.

It says government support in 1982 roughly equalled the level of spending found in Japan, Germany and France.

Britain's tax laws tend to favour established companies rather than NBFs. It has the largest and most rapid depreciation allowances of capital expenditures for scientific research "of all the potential U.S. rivals in biotechnology."

But for the NBF, both the taxation of long-term capital gains—at 30 per cent—and of income from sale of technology "are the most unfavourable of the competitor countries."

It estimates that between 100 and 1,500 "experts in some aspect of biotechnology" have been brain-drained from Britain in the past few years—an indication of the uncertainty here. Of these, 13 had gone to one NBF alone, Biogen in Geneva.

Although the study finds Britain has the potential to be a major competitor to the U.S., because of its strong research base and government interest, it is hampered by what "appears to be a lack of entrepreneurialism."

Switzerland: Three major Swiss pharmaceutical groups—Ciba, Geigy, Hoffmann-La Roche and Sandoz—together with Biogen constitute an "impressive national potential in biotechnology," the report concludes. Sixty per cent of the world's pharmaceuticals are backed by a strong university research system.

Low corporate tax rates—the lowest in Europe—are favourable to established companies. Swiss anti-trust laws are no problem for R & D joint ventures. The big drug houses conduct much of their R & D in other countries but the academic system in Switzerland draws talent from other countries. The report concludes that, given the new government focus on biotechnology, Switzerland is a commercial force to be reckoned with.

advanced technologies. France has the most highly co-ordinated policy of any of the six leading nations in biotechnology, the report finds.

Commercially, it "lags somewhat behind" the five already discussed. But if it can boost its manpower, "French industries could well gain a competitive footing in selected product markets."

Other competitors: The report also discusses several countries not considered to be in the first league commercially, yet which are active in biotechnology. Sweden has bright ideas but "negative Swedish public attitudes" towards genetic engineering have inhibited progress.

Canada has designated biotechnology as a priority target but is short of people and of experience in getting government, universities and industry to collaborate. The Soviet Union is seen to have one major advantage over the capitalist system in that R & D is supported from inception through to production and distribution. Brazil is the only developing nation with a

government policy for biotechnology but is short of people and capital.

How close is the parallel between the new biotechnology of the 1980s and the emergence of the U.S. semiconductor industry in the 1960s? This is a question of consummate interest to investors.

The study finds some similarities but bigger differences, chiefly because "biotechnology is not an industry but a set of technologies that can be put to use by many industries."

It concludes that whereas "market pull" gave the big impetus to semiconductors, in biotechnology the impetus has been "science push" from a big U.S. basic research programme in molecular biology, geared to find a cure for cancer.

It believes that NBFs currently face a very different, and much more complex, market environment than did the new entrants to semiconductors in the wake of Bell Laboratories' discovery of the transistor.

French national interest was aroused in late 1980 with the Pelissolo report, and the Mitterrand Government has since resolved to push biotechnology as one of several chosen

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Tuesday January 31 1984

U.S. PRESIDENTIAL ELECTION

Mr Reagan's strong hand

By Reginald Dale, U.S. Editor in Washington

Murder in Madrid

THE assassination in Madrid of Gen Guillermo Quintana Lacaci shows once more how vulnerable democratic states have become to determined bands of killers. Whether it be the IRA in Britain, extremists of Left or Right in Germany and Italy, or gunmen from the Middle East in Austria; their murderous activities have not been prevented by the police.

So much should be firmly noted before examining the question of whether Spain is especially vulnerable and, more importantly, whether there is reason to fear for the stability of a country that has known dictatorship less than 10 years ago.

The answer to the first question, as to the vulnerability of Spain, has to be in the affirmative. The country has a tradition of political violence. Memories of the civil war in the 1930s are still alive. It has to contend with the aspirations of minority groups, especially the Basques, who have fretted for centuries under centralist rule from Madrid.

In addition, powerful elements in the office have not come to terms with democracy and with civilian control over the forces. They attempted a serious coup in February 1981 and another in October 1982. Disruption of the Basque terrorism creates an especially dangerous mixture.

By striking at individual officers the terrorists hope to encourage the military to rebel and thereby weaken the civilian Government. It is not clear whether this has happened in the case of Gen Lacaci: the police suspect that he was killed by Basque terrorists, but that has not been confirmed.

At first sight the choice of victim is perplexing. Gen Lacaci was retired. Though he made no secret of his Francoist past, he had proved loyal to the democratic Government. The attempted coup of 1981 was foiled largely because Gen Lacaci, as military governor of Madrid, denied his support. The terrorists did not strike at a diehard. They killed a man unlikely to sabotage government attempts to conciliate Basque sentiment. That may have cost him his life. Extremists often reserve special hatred for the less extreme among their opponents.

Though it has to be accepted that Spain is exposed to a heightened risk of terrorist attacks, there are encouraging signs that Spanish democracy is increasingly able to cope with such challenges. First and foremost one must cite the failure of

the coups of 1981 and 1982. Had either of them found active support from the key officers, there would be a very different story to tell.

The plotters of 1981 were treated rather gently by a court martial. But the civilian Government took the matter to the Supreme Court where a number of sentences were imposed. The officer corps acquiesced.

It showed no open disquiet when, this month, the Government re-organised command structures at the very top of the armed forces in order to strengthen control by the civilian Minister of Defence. If resentments were aroused, they have not been publicly aired.

Insufficient evidence

That is insufficient evidence to conclude that the diehard have given up. But the Socialist Government of Sr Felipe Gonzalez may be more acceptable to the officer corps than might have been supposed. It has a firm majority, diminishing the possibility of a power vacuum. The Socialists can also be identified to so extent with the cause of Spanish unity. In the Basque country and in certain areas the Socialists are in opposition to regional governments pushing for greater autonomy.

Sr Gonzalez's Government itself has scored an important political success against Basque terrorism by inducing the French authorities to detain or deport several suspected terrorist leaders operating from a safe haven in France. It is not clear whether this has happened in the case of Gen Lacaci: the police suspect that he was killed by Basque terrorists, but that has not been confirmed.

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PRESIDENT Ronald Reagan has finally made it official. After a "difficult personal decision," he has let the American people in on one of the worst-kept political secrets of the decade: he is to run for a second term in the White House in this year's November elections.

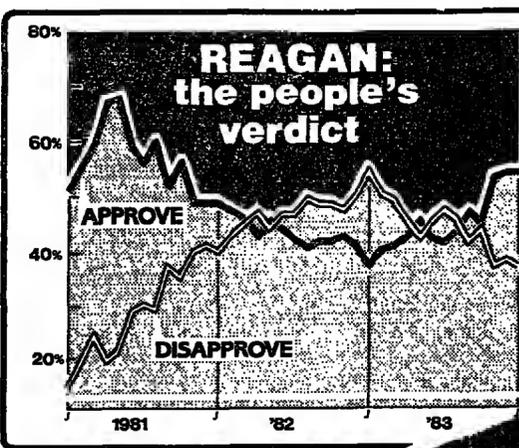
To suggest that anyone in Washington yesterday was mildly surprised would be an overstatement. Mr Reagan has for months looked every inch a candidate. But he managed to squeeze the last drop of drama out of what might otherwise have been a run-of-the-mill announcement by delaying it for so long—it was originally billed for early in September—and engaging in a teasing public game of hide-and-seek that left just the slightest nagging doubt about his real intentions until the last minute.

Now, he is eager for the fray. Since last week's upset State of the Union address, Mr Reagan has been in a combative electioneering mood. Newsweek magazine shows him happily limbering up his hand-squeezing muscles with a special fist-bump exercise device and for a man who will be 73 next Monday he is by all accounts in excellent health. (His age is probably less of an issue now than it was in 1980.) For two months now, money has been flowing into his campaign coffers—\$4.2m at the latest count—and over 2m more fundraising letters were specially mailed at the weekend to arrive immediately after Sunday night's announcement of his intentions.

His timing could not, as it turns out, have been better. He has cut the tape in the 1984 election season, riding a new wave of national popularity that makes him, according to more than one opinion poll, the most respected White House incumbent after three years in office since President Dwight D. Eisenhower in the mid-1950s.

Unlike most of his predecessors, Mr Reagan's approval rating has climbed during his third year, reaching an all-time low 12 months ago in what was inevitably dubbed his "winter of discontent." He is likely to be the first incumbent president, again since Eisenhower, whose approval rating has risen since his inauguration. It is not, however, going to be all downhill from here. While his personal popularity may be on the rise, thanks largely to the economic recovery, Mr Reagan still creates deep divisions in an electorate that is concerned about many of his specific policies. His is potentially vulnerable on all of the three major issues—the economy, foreign policy and his particular brand of leadership—that now look like dominating the campaign over the coming months.

Some of his opponents argue that he has polarised the country so sharply between the haves and the have-nots that this will be the first "class" election in the U.S. in living memory. Mr Reagan's White



*Gallup Opinion Polls on his performance as President

House sides would not put it quite like that. "It's a battle for the economic middle as well as the political middle," says Mr Richard Wirthlin, Mr Reagan's pollster.

But the Republicans accept that Mr Reagan's lead in the opinion polls is likely to narrow after the Democrats select their candidate, and they fear that an international event beyond the President's control, perhaps in Lebanon, could play havoc with their calculations. "We're expecting a very close race and preparing for it," says Mr James Baker, the White House Chief of Staff. For the moment Mr Reagan's strongest card is the economy, a point underlined last week by a New York Times/CBS News poll that gave him the highest public approval rating for his economic policies since April 1981. Mr Reagan's campaign officials are keeping their fingers crossed that the current combination of healthy-looking growth, low inflation and declining unemployment will hold up until November, as the President himself vigorously insists that it will. If, before then, any of the indicators start to go even slightly sour, the Democrats will undoubtedly try to make the most of it.

Mr Reagan's main immediate concern on the economic front, however, remains the budget deficit, now running at about \$180bn a year, which his bad pledged to eliminate altogether by now in his 1980 campaign. Tacitly at least he acknowledged his sensitivity on the issue last week by appealing to the Democrats to share responsibility with him in tackling them.

But while the Democrats can be expected to keep pounding away at the deficit, they are finding it harder to attack Mr Reagan on the current state of the economy in general. Much of their fire is accordingly

now being directed at what is generally acknowledged to be one of Mr Reagan's weakest points—foreign policy.

Foreign policy would not ordinarily be expected to play a dominant role in a peacetime American presidential election. But this time there is an intensely emotional, and visible, focal point for national anxiety—the U.S. Marines in Beirut. Largely because of mounting misgivings over Mr Reagan's handling of the Lebanese problem, the pollsters show that many Americans blame the Soviet Union more than Mr Reagan for increasing world tension, and believe that he has made the U.S. a "safer" place as he claims. But the euphoria that followed October's Grenada invasion has waned, and a clear 60 per cent earlier this month

expressed the view that Mr Reagan is trying to do too much militarily overseas. Mr Reagan's campaign officials claim that three years of his presidency have given the lie to the "war mongering" image that former President Jimmy Carter tried to pin on him in 1980.

The Democrats, however, still believe that they can make considerable mileage out of the "War and Peace" issue, against a background of growing American consciousness of the dangers of nuclear war and Mr Reagan's failure to reach a single arms control agreement with Moscow.

Mr Reagan, they say, is the first U.S. President since Herbert Hoover in the early 1930s not even to have met his Soviet counterpart. They claim he has not achieved any major foreign policy breakthroughs in three years in the White House. "War and Peace" issues are to extract the Marines from Beirut and muddle through in Central America, he may be able to defuse some of this opposition. He will in any case take credit



either his closest advisers or well-wishing supporters. The American dream has come true relatively painlessly for Mr Reagan, who started life in a humble small town in the Midwest. He sometimes gives the impression that he finds it hard to grasp how rough life can be for others, not necessarily through any fault of their own. He firmly believes that the capitalist system will look after those who embrace it warmly enough.

The Republicans dispute Democratic claims that such Reaganite attitudes have bitterly polarised the nation. Both sides were exchanging competing figures to prove their point at the weekend, with Mr Reagan's pollsters claiming that those "strongly disapproving" of him have now dwindled to less than 20 per cent of the electorate. The Democrats say that a "hard core" of Reagan supporters, composed of about 35 per cent of the voters, is confronted by a slightly larger group of 38 per cent who are "unwaveringly opposed to it." The Republicans admit that come polling day, they will have to win over a considerable number of the more numerous registered Democrats to repeat the success of 1980 and reverse the general million mainly younger, better educated, middle income voters who deserted Mr Reagan for the Democrats in the November election—an objective that is by no means out of reach.

Mr Reagan has little chance of holding even the 10 per cent of black votes he won in 1980 and for most his now he has been energetically wooing the growing Hispanic vote instead. He still suffers from the notorious "gender gap," which shows his approval ratings nearly 9 per cent lower among women than men—another item of considerable concern to the White House strategists.

Mr Reagan has a big lead in rural areas—particularly in the "wide open spaces" of the West. The Democrats lead in the large cities, the East and their traditional southern stronghold. Suburbs and small towns, according to one pollster, are fairly evenly split. All these factors could make the race closer than Mr Reagan's recent buoyant approval ratings might suggest. The Democrats believe that if they can turn it into a sufficiently "big stakes" election, they can mobilise previously apathetic voters and reverse the declining turnouts of recent years—after all, 55 per cent of Americans claim to be Democrats.

Mr Reagan, however, starts with a number of high cards in his hand, and he can be relied on to play them with all the skills of timing and attention-grabbing that he has displayed in the past. Yesterday, the Reagan camp was cock-a-hoop about the prospects. But a note of warning was struck by Senator Paul Laxalt of Nevada, Mr Reagan's close friend and campaign chairman. "It's too good to be true," he said "and that makes me a bit nervous."

Finance for small UK firms

THE Business Expansion Scheme, which was introduced in 1981 as the Business Start Up Scheme has proved to be one of the British Government's most imaginative ideas for helping small businesses. But in recent weeks the manner in which it is being used by some operators has attracted unwelcome publicity, raising questions which the Chancellor may have to answer by tightening up the rules in his forthcoming Budget.

One of the difficulties for policymakers at this stage is the shortage of evidence with which to judge the success of any of the Government's measures to assist small firms—the BES, which provides income tax relief on up to £40,000 of shares subscribed by individuals in most unquoted trading companies, is no exception.

It is already clear that the BES has been much more effective than the original Start Up Scheme (which limited relief to investment in companies which had been trading for up to five years) and conspicuously it has spawned a large number of managed funds which collectively have pulled in more than £30m from private investors.

This is a large pool of money for investment in the ordinary shares of unquoted UK businesses, much greater, for example, than last year's equity commitments by ICFC, the leading supplier of long-term funds for small companies. There is little doubt that it would not have been raised but for the Government's decision to increase the individual subscription limit to £40,000 a year and, crucially, to extend the relief to established companies as well as the riskier area of start-ups.

Unseemly scramble

Three developments, however, give cause for concern. Many of the BES fund managers have promised to invest their money before April 5 to ensure that the private investors for whom they are acting get tax relief on 1983-84 income. It would do the BES no good at all if there is an unseemly scramble to throw this artificial deadline to avoid money at any

"entrepreneur" who walks through the door.

Secondly, the BES is not yet penetrating the one area of the market where there remains an obvious equity gap—namely those businesses which require sums under £50,000. Ministers originally hoped that modern Aunt Agatha—in the form perhaps of a doctor or a dentist—would use the Scheme to back local companies of which they had direct personal knowledge.

But while the City of London's participation is welcome, only local initiatives such as the one backed by an enterprise agency in the North-west of England recently won early approval for the scheme's intended targets. Finally, there is the key question of which ventures are now attracting support.

A clear picture has not yet emerged, but it appears likely that established companies—undercapitalised but with some track record—could attract the lion's share of the money. This is acceptable so long as finance available for start-ups does not dry up.

More controversially, a handful of promoters are aiming to use the Scheme to finance farming. For example, the Hill Samuel Group is in the process of trying to pull in up to £15m for a new company, Beechbank Farms.

The farms which Beechbank buys will no doubt benefit from new investment and as long as the sums remain small other sectors are unlikely to suffer. It is nevertheless difficult to argue that farmers are a group the Scheme was intended to support.

Hodge's double

At 79 years of age Sir Julian Hodge, the Welsh financier, looks like pulling off a notable double if he succeeds in securing a full London stock exchange listing for the Commercial Bank of Wales early in April.

Hodge will be redeeming a promise made to shareholders when he launched his idea for a Welsh "bank" more than 20 years ago: that it would have a full stock exchange listing. And he will, he confidently believes, be the oldest businessman ever to bring a company to a listing. The latter claim, he agrees, is open to challenge. But his research yesterday failed to unearth one.

Hodge has been controversial always; but dull, never. His varied business lifetime provides a bedtime story of poor boy who made good. Starting life as a railway clerk in Cardiff he sold insurance round the working-class streets in the evenings.

Hodge has given away more than £35m to charitable foundations but, nevertheless, owns to being "very rich"—on the yardstick that such a rating starts with personal assets of more than £10m.

Work is still his pleasure and he puts in a 7-day week. His concessions to advancing years are a mid-week round of golf for exercise—"I go back to the office after, of course"—and short working days on Saturdays and Sundays finishing at 3 pm.

That is the Hodge who has become a Welsh folk hero in his time and has attracted investor deposits of £44m into his Commercial Bank of Wales.

Men & Matters

when his activities were described by one writer as "getting into one sticky situation after another."

His Hodge Group, a sprawling empire of banking, hire and transport services, had just been reorganised with outside help. He had financed car-buyers using such a muddled computer system that, as he admits, "We could not back-check on who had paid and who hadn't."

Hodge, a Labour Party supporter, and a devout Roman Catholic, had a dream. He would found a Bank of Wales, supported by the savings of the Welsh nation, to spearhead the industrial regeneration of the Principality.

When it came to pass in 1972 he had powerful political support. Cardiff MP James Callaghan, later to be Prime Minister, was a member of his original board. So was another Cardiff MP, George Thomas, who went on to be Speaker of the House of Commons.

But Hodge's "bank" was not in the full-blooded form he had envisaged. The authorities jibbed at a Bank of Wales—it might be misunderstood abroad as being a central bank—and insisted upon another name. He was pressed to accept "Investment Bank of Wales" and served for "Commercial Bank of Wales."

The new business had a difficult start in the 1970s and in 1981 was told by the Bank of England to stop calling itself a bank. But less than a year later the Bank of England relented and granted the Commercial Bank of Wales full banking status. Threadneedle Street liked the look of the flow of foreign funds into Cardiff.

Elf struck



"It's all very well paying £1,000 for giving us union membership—what happens if it proves to be a runaway success?"

Michel Pecqueur, brought in last year to head Elf Aquitaine, the state-owned French oil group, fielded some awkward questions on the "oil sniffer" affair yesterday with great, and genteel, aplomb.

A genial man who, from some angles at least, hears a striking resemblance to Helmut Kohl (though Kohl has more hair) and excudes the same basso-voiced bonhomie, Pecqueur was delivering Elf's 1983 results—which confirm the group as France's most profitable enterprise.

Elf would be "drawing consequences" from the scandal, Pecqueur said, but it belonged firmly in the past, a "limited" episode in the life of the group.

Considerable mystery still surrounds the Ffr 500m Elf paid during the late 1970s for the electronic oil-detection method subsequently found to be worthless. Pecqueur promised that the company

Owen's trip

At least the thought had Dr David Owen musing in Tokyo last night. There was the leader of the Social Democrats in the Japanese capital just as Nissan was beginning its final debate on how to invest in the UK. Had he not, it was put to him, contemplated a Jesse Jackson-style mission from which he could claim the credit for bringing the Japanese car company to Britain?

Owen had to confess that he had not thought of it—though he has been discussing investment, among other things, and was yesterday moving in the upper reaches of Japanese political society, meeting Prime Minister Nakasone.

Owen's mission, in fact, has been to get together with Saburo Okita, former Japanese foreign minister, and Zbigniew Brzezinski, Jimmy Carter's national security adviser, to hammer into shape a report for the Trilateral Commission (which groups together luminaries from the U.S., Europe, and Japan) on how to revitalise the global economy.

The report is due out in April and, Owen hopes, might serve to focus the minds of heads of government at the London economic summit in June.

The main point Owen is going to make in it is that Japan's greatest contribution lies in foreign investment—like that of Nissan, I presume.

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Letters to the Editor

The real reward of collaboration with the Japanese

From the Principal of Capito Technical Transfer Management... Sir, Christopher Lorenz (January 16) rightly warns those contemplating collaboration with Japanese to think through the longer term relationship and to beware of situations inviting failure.



Having long worked in Japan with Japanese companies in numerous forms of collaboration, both within and without Japan (in Europe and the U.S.), I can say with confidence that Japanese companies and individuals are no more predictable and often a lot less reliable or trustworthy than their parallels in the West.

Hence a one-sided transfer of know-how or products is not really a collaboration but a larger share of the burdens of its joint ventures while the Group's financial troubles were at a peak, without affecting the relationships adversely.

As Christopher Lorenz says, a development continuation is a valuable way by which a Western partner may preserve its role, building on original strengths where possible. My strong advice to companies contemplating a collaboration with Japanese is not to be afraid for their backs but to be very careful over their preparation and presentation of their negotiating position, using the best expertise and advice available.

Leadership of the ISTC

From Mr K. Hale... Sir, Mr Brian Groom's commentary on Mr William Sirs' leadership of the ISTC (January 18) is an interesting reflection on how some commentators and the public at large perceive trade union leaders.

Actual experience of dealing with contemporary senior trade union officials does not always match popular perception as exemplified by simplistic labels such as "left wing," "right wing," "moderate" and "militant." Contrary to what Mr Groom evidently believes, I don't believe there are many in the steel industry—either within the ISTC or outside it—who really feel that the union's status has been enhanced by Mr Sirs' stewardship.

Portability of pensions

From Mr R. Jenkins... Sir, Barry Riley (January 21) was right to point out that true pension portability would spell the end of final salary schemes, since the two approaches are irreconcilable.

portability is the middle-aged employee made redundant through no fault of his own. Final salary schemes were introduced with the best of intentions. Now we see that uncertainty over the term of employment introduces a random element into the benefit to the employee of the final salary guarantee, but often an employee will have no alternative to accept. Indeed, at the time of accepting employment, the employee relies for his pension, rather than the underlying funding.

UK Breakfast Television

The new gospel at TV-am

By Raymond Snoddy

LORD BERNSTEIN, the creator of Granada Television, sipped a large whisky and gave Timothy Aitken, chief executive of TV-am, three blunt predictions about the future of Britain's breakfast television company.



Before the knives came out: TV-am stars at the launch a year ago. Of the original team only David Frost (third from left) is currently a regular presenter.

Nine months and many crises and headlines later as TV-am prepares to celebrate its first anniversary on the air tomorrow Lord Bernstein's warnings have turned out to be "the gospel." First, the write-off. In November TV-am wrote off £4.5m in losses as part of a £5.5m re-financing that brought in Fleet Holdings and Kerry Packer's Consolidated Press with much needed new operating capital to join original shareholders such as Barclays Merchant Bank and Prudential Assurance.

They predicted a year ago when for a few weeks they were able to charge £7,600 a minute for advertising. We promised ratings which we have now delivered. But we are still around the £3,000 mark. That's pathetic. Somewhere along the line there is a breakdown," says Mr Aitken.

TV-am is now offering major companies the chance to pay an undisclosed premium on the £3,000 rate but to have it held for two years no matter how much the audience increases. But the agencies are still sceptical. Mr Morgan Johnson, managing director of Davidson Pearce, the advertising agency which placed the first advertisement shown on TV-am — for Wall's sausages — is still critical of the profile of the TV-am audience and its pro-rata costs compared with the rest of TV.

with a peak audience of 1.4m equalling the BBC peak. Timothy Aitken believes the TV-am peak could pass the 2m mark later this year and that revenues of £14m-£15m are possible. In year three £15m, he believes, is definitely on the cards with "some serious numbers—£20m-£25m" in year four and return on capital. The crisis at TV-am has, however, eclipsed a significant change in Britain's early morning broadcasting habits. Gradually the audience is building for the soft-boiled, putlover clad magazine programme that comes equally from the transmitters of the BBC and the IBA at breakfast time.

Preference shares

From the Deputy Chairman, of John Govett... Sir, May I take up a point raised in the Lex column (January 24) concerning preference shares. Lex points out that Grand Metropolitan has acquiesced for its offer, through its wholly-owned subsidiary, Grand Metropolitan Investments, of 89.5 per cent of the preference shares of Grand Metropolitan (Scotland) and concludes that only another 0.2 per cent is needed before the compulsory purchase provisions of Section 209 may be applied.

It would be interesting to know what course Grand Metropolitan intends to adopt. If it does succeed in applying compulsory purchase powers with a 9.9 per cent minority outstanding, the implications for minority shareholders are far-reaching and serious. All large groups can incorporate suitable subsidiaries so that an existing holding can be held in subsidiary A while subsidiary B makes a bid for the minority. It would appear that the bidder must get 90 per cent of the shares but does not already own—is thus circumvented. Lawyers may disagree about the correct interpretation of the 1948 Companies Act; its spirit would certainly seem to have been lost if this kind of exercise were to become commonplace.

Return of surplus

From Mr D. M. Anthony... Sir, May I join the debate following the charge of lack by the Superannuation Funds office on the return of surplus? It seems to me that what needs to be examined more closely is what is a "surplus position." Traditionally, pension funds in the UK have measured their strength of funding in terms of liabilities based on pensionable service and pensionable salary at the date of a valuation by the actuary.

to date and pensionable salaries projected to normal retirement — the real liability for a pension scheme providing benefits related to final pay. The assessment of funding produces, surely, a more meaningful and realistic view. It may be that "surplus" exists if assets exceed liabilities in these circumstances, although there are still questions to be raised and answered about funding objectives.

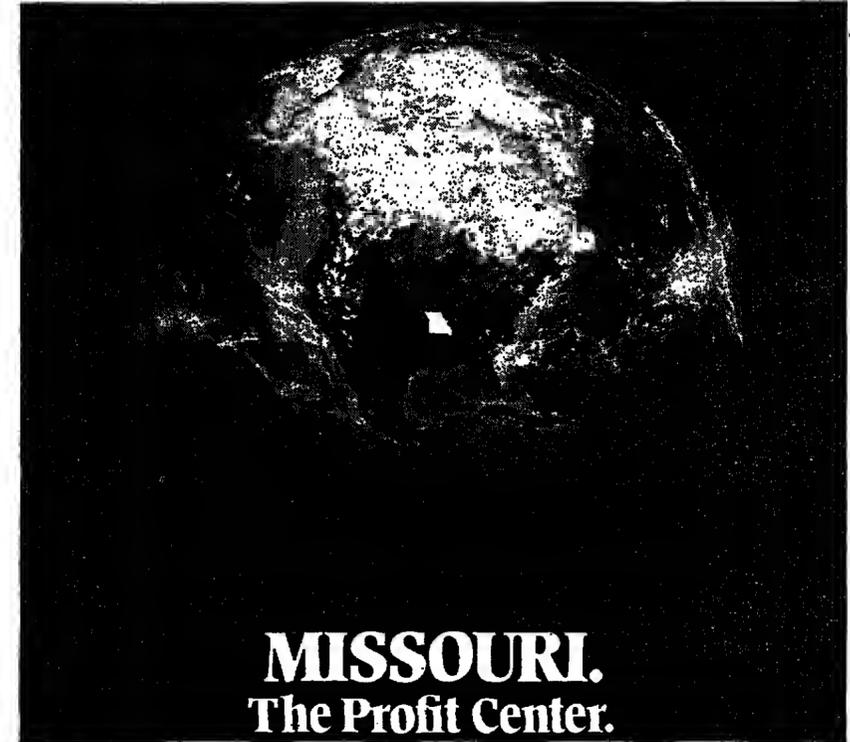
Coping with the shock of the new in architecture

From Mr M. Manser... Sir, Of the many people who wrote to you about my article "Conservation has gone far too far" on January 11, none questioned the proposition. Most, however, attributed the problems to a general dislike of the new architecture.

and the constructor. If it is to be well designed the owner and the architect have to work in close harmony and if it is to be well constructed the architect and the builder have to work in close harmony. The owner has to contribute. There has never been a fine piece of architecture without a deeply interested and committed owner.

One very famous, internationally respected, British architect, working on a site in London has been presented with a photograph of a 19th century building in Glasgow, with the instruction that his London elevations should look the same and that there should be terracotta cherubs over the windows.

One very famous, internationally respected, British architect, working on a site in London has been presented with a photograph of a 19th century building in Glasgow, with the instruction that his London elevations should look the same and that there should be terracotta cherubs over the windows.



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Missouri is right... in the center



Surprise milk bill confuses UK rebate row

AT LEAST two obstacles obstruct early payment of a \$600m rebate on Britain's 1983 EEC budget contributions...

As for Mr Facini's views on the need to reclaim the dim and distant milk payments, they are disputed both by the Commission's legal services and its agricultural directorate...

the Irish board said Mr Richards had prejudged the issue. The Irish claim that the UK milk regulations are costing them millions of pounds each year...



Mr Ivor Richard

British Government's cash flow, since the Treasury has to finance intervention purchases, which are only subsequently reimbursed by the EEC.

CGT calls for protest on Paris policies

FRANCE'S Communist-led CGT union has issued its strongest condemnation so far of the Government's proposals for restructuring...

EEC asks Japan to suspend duties on manufactured imports

THE EEC has proposed that Japan "suspend" import duties on manufactured goods for an indefinite period to reduce its growing trade surplus with the Community.

It sets specific targets for higher imports, and it reviews its national distribution system, often said to be a barrier to foreign goods.

figures released by its Ministry of Finance, Japan sold to the EEC \$1.6bn more goods than it bought, roughly a 10 per cent larger surplus than in 1982.

Cheysson to visit Libya for Chad talks

FRANCE last night launched a diplomatic offensive to secure peace in Chad with the announcement that M Claude Cheysson, the Foreign Minister, will hold talks in Libya at the end of this week.

But the Ministry of Defence made clear that the main "front line" of French troops - who have been in Chad since last August to support the Ndjamena Government - remained the previous demarcation strip linking the towns of Salal and Arada.

Telecom pact agreed by Japan, U.S.

more advanced equipment and also because of the spin-offs they see from R and D involvement in a company which is one of the most advanced in the world in this field.

Trafalgar House may take over shipyard

TRAFALGAR HOUSE, the building, property and shipping group, seems close to clinching a cost-free takeover of Scott Lithgow, the Lower Clyde shipyard which faces closure following the cancellation of an £86m drilling rig order for Britoil.

an offer from the private sector, which they see as saving 4,250 jobs in a politically sensitive part of Scotland. The intervention would also, it is argued, preserve an important British facility in the offshore industry.

Belgrade plans fallback if IMF talks fail

AS YUGOSLAVIA prepares for next week's third and probably final round of negotiations with the International Monetary Fund (IMF) for a new standby credit, Mr Zvonko Dragani, the Deputy Prime Minister, has admitted the existence of a fallback plan to be imposed if the IMF talks fail.

World Weather table with columns for location, temperature, and weather conditions.

Armo insurance sale

Continued from Page 1 stemmed from a strategic decision to remove Armo from the insurance business. This decision resulted from changes in Armo's tax status in the wake of massive writedowns on its steelmaking and manufacturing facilities which Mr Holiday said meant that Armo "is no longer able to affect underwriting losses with tax credits."

group's London-based financial services operations, had resigned. "Since our company's strategic plan no longer coincides with their objective, these gentlemen have decided to pursue other personal interests," Mr Holiday said.

THE LEX COLUMN

A ritual rally in Hong Kong

Following an oriental tradition which some believe to date back as far as 1883, the Hong Kong stock market has been moving up sharply ahead of the Chinese New Year.

grow under its feet while Britain's Monopolies Commission deliberates on the matter. Less than a month after making a recommended offer for Candecca, Trafalgar is busy negotiating the purchase - or more likely the gift - of Scott Lithgow, the troubled Scottish shipyard.

has doubled in the last four months - it seems that Harrison's is in with a chance of selling a number of its vestigial plantation interests to its 30 per cent Malaysian associate, Harrison's Malaysian Plantations.

The immediate cause of yesterday's surge was the 1-point cut in local best lending rate at the weekend. Prime is now 11 1/2 per cent, down from 16 per cent four months ago, and linking the Hong Kong dollar to the U.S. dollar has been an unflinching success - to the extent that some of the money now coming into equities is coming from the dollar currency hedges established during last year's panic.

The immediate effect on Trafalgar's balance sheet would be minimal. Scott Lithgow's assets are heavily written down and, even on a generous assumption, should represent less than 5 per cent of the group's net worth.

The market drew its tentative conclusion yesterday in adding £16m to Harrison's own capitalisation at £25p, the company is currently worth £314m. There are risks, of course, in any deal which relies on 10 triangular negotiations - and if they all go through, Harrison may yet find itself subscribing for shares to maintain its stake in the enlarged Malaysian company.

Trafalgar House

Trafalgar House may or may not be planning to relaunch a bid for P & O but it is not letting the grass

grow under its feet while Britain's Monopolies Commission deliberates on the matter. Less than a month after making a recommended offer for Candecca, Trafalgar is busy negotiating the purchase - or more likely the gift - of Scott Lithgow, the troubled Scottish shipyard.

Advertisement for Chestertons office building, featuring a large image of the building and text: 'A great investment! Spending an hour walking round Oriel House Connaught Place, London W2, a magnificent new air conditioned office building providing 84,000 sq.ft. could be the best investment you can make with your time this year.'

Boeing halts downturn with \$355m for year

By William Hall in New York

BOEING, the giant U.S. aerospace group, pulled out of its two-year profit decline in 1983 and has posted a 21.5 per cent rise in 1983 net income to \$355m.

Mr T. A. Wilson, Boeing's chairman, says that the increase in earnings was attributable to increased sales, a lower level of research, development and engineering expenses on new jet transports, and continued favourable performance on U.S. government projects. The principal offsetting factors were the "extremely competitive market environment" and a higher effective tax rate.

Net income in the fourth quarter totalled \$98m, against \$91m a year before. For the full year, Boeing earned \$3.07 per share against \$3.02

Boeing says that 1983 saw a "modest recovery in commercial jet transport orders and an increase in military business which for the fourth consecutive year recorded higher sales, earnings and backlog."

Mr Wilson said that a sustained period of airline growth and profitability will be required before orders increase substantially over the 1983 level. The market remains very competitive, which has resulted in pressure on prices and the requirement for trading in older aircraft in return for new ones, delays in taking deliveries, and the substitution of smaller jet transports for the larger ones previously ordered.

Boeing sales for the full year rose 23 per cent to \$11.1bn.

Last year Boeing received 151 new orders for jet transports valued at \$3bn against 110 orders valued at \$3bn in 1982. The higher dollar amount reflects the significantly higher number of 747, 757 and 767 orders in 1983.

Sales to the U.S. Government totalled \$3.5bn, 9 per cent higher than the previous year. The principal contributors were the B-1B bomber, the E-3 Airborne Warning and Control System (AWACS) and the E-4 airborne command post.

At the end of 1983 Boeing had orders totalling \$18bn, some \$1bn lower than the year before. Of the total 1983 backlog, \$12.8bn, or 71 per cent, was commercial and the remainder government business.

Continued operations rise 24% at Time

By Paul Taylor in New York

TIME, the U.S. publishing, information and entertainment group which recently spun off its forest products division, Temple-Inland, as a separate company, yesterday reported a 24 per cent increase in net earnings from continuing operations in the fourth quarter.

Time said its fourth quarter net earnings from continuing operations increased to \$44.53m or 70 cents a share from \$35.88m or 57 cents a share in the 1982 final quarter.

The 1983 quarter results are before \$14.7m in net earnings from the divested forest products division and a net loss of \$4.3m from discontinued operations. After these items Time's final net earnings for the 1983 quarter were \$54.93m or 88 cents a share compared to a final net of \$43.2m or 66 cents a share in the 1982 period. This included net earnings of \$18.62m from Temple-Inland and a \$9.49m net loss from discontinued operations. Revenues increased to \$763.1m from \$668.9m.

For the full year Time reported net income from continuing operations of \$143.2m or \$2.25 a share compared with \$122.88m or \$1.97 a share in 1982.

After net income of \$51.7m from divested operations and a loss of \$26m from discontinued operations, Time reported a final net of \$108.9m or \$2.65 a share compared with \$153.1m or \$2.45 a share in 1982. After net income of \$53m and a \$22.76m loss from discontinued operations, revenues increased from \$237.2bn, to \$272.7m.

Time said the results of Temple-Inland, which was divested as a separate company from January 1, have been reclassified for reporting purposes as a discontinued operation as of December 31, 1983. Discontinued operations also include losses incurred in connection with Time's subscription television business, which was closed last year, and an adjustment to the provision for the shutdown of Time-Life Films, which was closed down in 1981.

Revised result for Kaiser Aluminum

By Our Financial Staff

KAISER Aluminum, the third largest U.S. aluminum producer, has revised its profits figures for the fourth-quarter and full year of 1983 to reflect a provision for a \$4.2m after-tax loss on standby letters of credit.

The letters were issued on behalf of a third party but for the account of Kaiser International, a wholly owned subsidiary. The revised figures for fourth-quarter net earnings is \$42m or 97 cents a share against a loss of \$123.4m in the same period of 1982. For the year, Kaiser had a net loss of \$74.9m, against \$115m loss in 1982.

In its mainline crude-oil business, Elf benefited last year from the rise of the dollar against the franc, as that more than compensated for the international fall in the oil price. The group extended its oil supply diversification last year and now produces oil and/or gas in 15 countries, with Colombia added to the list in 1983.

A cloud, however, continued over its U.S. operations. Including its small American crude-oil business, its specialty chemicals operations and the Texasgulf phosphate fertilizer business, Elf's U.S. performance was only just in the black last year. M. Pecqueur said, however, that he hoped Texasgulf would improve "clearly" in 1984 as a result of better conditions on the U.S. fertilizers market.

NEW 740 GLE MODEL CLOSES IMPORTANT GAP

Volvo takes on competitors

By Kevin Done, Nordic Correspondent, in Gothenburg

VOLVO, the leading automobile producer in northern Europe, yesterday launched itself into a new segment of the world high performance car market, further intensifying the competition with its chief rivals BMW, Daimler-Benz and Audi of West Germany.

It is aiming to take a growing share of the world market for sports, high performance saloons, which it estimates at around 1.1m units this year. The new 740 GLE model closes an important gap in the Volvo range.

The Swedish industrial concern, the largest in the Nordic region, is enjoying a dramatic surge in the fortunes of its car operations, which are now generating the lion's share of group profits, and are carrying the heavily loss-making energy operations.

The volume of Volvo car sales climbed by 15 per cent last year to 365,000, compared with 316,500 in 1982. At the same time the turnover of the group's car operations jumped by 45 per cent to SKr 26.2bn (\$3.23bn) helped by favourable exchange rates, higher volume output,

and a shift to higher value models. In the U.S. its biggest single market, Volvo car sales increased by 20 per cent to 87,700, in Sweden its second largest market sales rose by 7.8

The new model has been launched into one of the most lucrative and resilient sectors of the world car market and will compete with such rivals as the Mercedes

Enskilda Securitas has completed an international placement of 300,000 shares in Volvo, for a total of SKr 130m. The shares were originally issued to Mr Fraderic Hamilton in part consideration for Volvo's acquisition of a stake in Hamilton Brothers Petroleum Corporation. The international placement follows a series of occasions in which Euro market placement channels have been used for international share issues. Enskilda Securitas was formed in 1982 as the London-based investment banking arm of Skandinaviska Enskilda Banken.

per cent to 63,012, while car sales in the UK increased by 18 per cent to 61,200.

After several difficult years in the late 1970s Volvo has emerged as one of the world's most profitable car producers. Its car division generated 73 per cent of group profits in 1982 from 24 per cent of group turnover, and last year cars were responsible for an estimated 80-90 per cent of group profits of SKr 3.85bn.

Benzo 190, the BMW 5-series, the Audi 100, the Saab 900 turbo and the top of the range Ford Granada.

It will reach dealers in Sweden in March and will be introduced in most other continental European markets during the spring. Volvo is aiming to produce 10,000 units of the new model by the summer. It will be launched in the UK and the U.S. during the autumn.

The new car will be powered by a 2.3 litre, four-cylinder petrol injection engine developing 129 hp. Outwardly it is a development of the exclusive top of the range 760 series, launched in 1982, from which it has taken the body and major chassis components, but the engine and transmission are derived from Volvo's volume 240 series.

Texaco to sell Getty Oil outlets

By Our New York Staff

TEXACO, the U.S. oil group, plans to dispose of nearly half of Getty Oil's 4,490 service stations in an effort to clear one of the main antitrust hurdles in its \$10.1bn takeover of Getty.

Texaco said on Sunday that it had agreed to transfer substantially all of Getty Oil's marketing activities in the north-eastern and middle Atlantic regions of the U.S. to Power Test Corporation, a small independent petroleum marketing company.

The sale covers 600 of the 970 stations owned or leased by Getty in the region. In addition, Power Test has agreed to assume contractual obligations to supply another 1,300 additional Getty franchised stations. For the year ended December 31, 1983, the Getty operation to be transferred to Power Test had revenues of \$1.4bn.

The cost of the deal is around \$70m and will be consummated only when Texaco has received clearance to take over Getty Oil.

Texaco has agreed to assist in supplying Power Test's petroleum product requirements for the acquired properties by selling up to 22m barrels a year of petrol and 11m barrels a year of middle distillate petroleum products for a three-year period after the sale.

Phillips Petroleum, the Oklahoma-based integrated oil and gas company, boosted its fourth-quarter net profits from \$155m or \$1.01 a share to \$277m or \$1.61. However, the 1983 figures include a non-recurring gain of \$36m, against a \$63m loss in 1982, leaving the underlying performance virtually unchanged.

For the year, Phillips lifted net earnings from \$648m or \$4.23 a share to \$721m or \$4.71. Revenues slipped from \$15.9bn to \$15.5bn, with \$4.15bn (\$4.06bn) coming in the latest quarter.

Standard Oil Company (Indiana), the Illinois-based integrated oil company, plans to cut its workforce by about 3,000 or 5 per cent this year. The cuts would come through natural wastage and early retirement.

The company said the cuts were part of a company-wide cost reduction drive.

United Technologies affected by gains

By Terry Dodsworth in New York

UNITED Technologies, the broadly based U.S. military equipment and technology group, reported a 4.6 per cent fall in net profits last year to \$533.7m, or \$8.74 a share, to \$509.2m, or \$7.84 a share.

The company added, however, that the results were affected by two extraordinary non-recurring gains in 1982 worth a total of \$107m. Adjusted for the impact of these figures, net profits rose by 18 per cent from \$428.9m in 1982.

Mr Harry Gray, chairman and chief executive, said the group's performance had been achieved in the face of lower aircraft engine shipments and unfavourable foreign exchange rates. It attested to the "stability and the balance we have achieved through diversification over the past decade."

In the current year, Mr Gray expected the military aircraft engine business to decline, but he said that this should be more than offset by recovery in North American commercial and industrial businesses, while the sale of helicopters, electronic systems and other military equipment "looked promising."

Sales last year amounted to \$14.7bn against \$13.8bn. In the fourth quarter revenue rose by 10 per cent from \$3.5bn to \$3.9bn, while earnings rose by 19 per cent

to \$887.7m, leaving the year's total down from \$3.42bn to \$3.55bn.

The company expects to show substantially increased earnings in 1984 on the back of a strong recovery in the U.S. economy and the strengthening of its basic markets.

Earnings before rationalisation adjustments and disposals in the fourth quarter were up from \$5.4m to \$19.6m.

The loss in the third quarter arose from \$28m provisions caused by the extensive reorganisation of the group's international operations.

Owens-Illinois stages \$70m recovery

By Our Financial Staff

A TURNROUND of more than \$70m in the fourth quarter enabled Owens-Illinois, the largest U.S. glass container maker, to recoup some lost ground and finish 1983 with net earnings of \$69.1m, or \$2.46 a share. This compares with \$90.7m or \$3.10 for the previous year, while the loss was a \$51m gain from an accounting change.

In the last three months of 1983 there was a recovery to a net profit of \$38.7m, or \$1.39, against a \$5.6m loss in the third quarter and a \$31.8m loss a year earlier. Sales for the quarter fell to \$814.6m from

\$887.7m, leaving the year's total down from \$3.42bn to \$3.55bn.

The company expects to show substantially increased earnings in 1984 on the back of a strong recovery in the U.S. economy and the strengthening of its basic markets.

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American Brands ahead

By Our New York Staff

AMERICAN Brands, the fourth largest U.S. tobacco company, and the owner of Gallaher in the UK, reported record net profits of \$390m last year, despite a much higher tax charge and the unfavourable effects of the slide in the pound.

Earnings were up by 2.4 per cent from \$381m, or \$8.55 a share, to \$390m, or \$8.76 a share, while sales rose by 6 per cent from \$6.5bn to \$7.1bn. The tax charge, however, was up by a little over 18 per cent to \$340m and the company added that

if the exchange rate for sterling had remained constant, net income would have been up by 6 per cent, the equivalent of an additional \$14m, or 26 cents a share.

In the fourth quarter, earnings rose to \$104m, or \$1.81 per share, against \$103.8m, or \$1.80 a share in 1982, despite a 20 per cent increase in the tax charge.

Mr Edward Whittemore, chairman, said that Gallaher, which makes Benusso and Hedges and Silk Cut brands, had a "superb year."

REFINING AND DISTRIBUTION LOSSES HALVED

Elf stays at top of French profits league

By David Marsh in Paris

ELF AQUITAINE, the French state-controlled oil and chemicals group, yesterday said net consolidated profits last year were similar to the FFr 3.5bn (\$406m) registered for 1982, maintaining the company's position as the most profitable in France.

Michel Pecqueur, Elf's new chairman, who took over from M. Albert Chandon last June, said the results marked a clear increase in Elf's profitability, as the 1982 surplus was boosted by exceptional receipts of FFr 1.6bn in repayment of debts from Iran.

Last year's profit was registered on group turnover of FFr 150bn, up sharply from FFr 115bn in 1982. The rise resulted mainly from the incorporation in mid-year of large slices of chemical operations formerly belonging to France's nationalised Pechiney group. Those were transferred under the Government's chemical industry reorganisation.

M. Pecqueur announced last year's "positive" results after weeks of controversy over the group's role in France's "oil tanker" affair. During the late 1970s Elf transferred abroad FFr 500m to finance oil prospecting using an electronic method drawn up by foreign "investors" which later turned out to be

based on a fraud.

The new chairman, who took over from M. Chandon was dismissed by the Government in a row over the chemical industry restructuring, declared that the prowess of the group should be judged on the basis of its overall financial results and exploration activities rather than on a "limited" event which, "although painful, belongs in the past."

He made clear that last year's underlying profits improvement was due chiefly to a fall of roughly half in losses incurred by its refining and distribution business.

Showing the financial improvement, cash flow last year (including base chemicals, but after deducting exploration charges) rose to FFr 14bn from FFr 11.3bn in 1982.

Investments were maintained at around FFr 15bn. M. Pecqueur cited as an example of continuing international confidence in the group - in spite of the "tanker" affair - the results of the latest round of Norwegian North Sea oil block allocations. Announced last Friday they gave Elf an 8 per cent exploration share in the "Diamond" offshore block. The only other non-Norwegian companies given allocations were Esso and West Germany's Deminor.

The "economic loss" in the refining and distribution area, based on

comparisons of unchanged stocks, fell from more than FFr 4bn in 1982 to around FFr 2.2bn last year, M. Pecqueur said.

Elf lost around FFr 310m in refining last year as a result of the insufficient application by the Government of a price-fixing formula intended to pass on as bigger petrol prices the effect of the surge in the dollar.

The Government had announced that the formula would be modified to allow a full link between the rate of the dollar and petrol prices as from February, M. Pecqueur said. But that alone would clearly not be enough to stem losses in this sector.

Another loss-making area was the group's basic chemicals activities, swollen by the takeover of the Pechiney operations. Elf, which is now France's biggest chemical company, has set up a subsidiary, Atochem, to group those activities, for which the Government has set a target for return to profit of 1985-88.

After the drawing up of a restructuring plan that will entail job cuts of 2,300 over the next few years, M. Pecqueur said the profits target seemed realistic.

After the absorption of chemicals jobs as part of the industry reorganisation, Elf now has 44,000 employ-

ees in non-oil activities, against 31,000 in its traditional mainline oil business. He said it would be impossible to allow one part of the group to go on making "chronic deficits."

M. Pecqueur said the chemical sector lost around FFr 400m last year because French price controls kept chemical prices below international levels. That would be partly remedied by new regulations coming into effect in February bringing French prices up to European levels.

In its mainline crude-oil business, Elf benefited last year from the rise of the dollar against the franc, as that more than compensated for the international fall in the oil price. The group extended its oil supply diversification last year and now produces oil and/or gas in 15 countries, with Colombia added to the list in 1983.

A cloud, however, continued over its U.S. operations. Including its small American crude-oil business, its specialty chemicals operations and the Texasgulf phosphate fertilizer business, Elf's U.S. performance was only just in the black last year. M. Pecqueur said, however, that he hoped Texasgulf would improve "clearly" in 1984 as a result of better conditions on the U.S. fertilizers market.

This announcement appears as a matter of record only.

BIAO
AFRIBANK

BANQUE INTERNATIONALE POUR L'AFRIQUE OCCIDENTALE

U.S. \$36,000,000
Certificate of Deposit Issuance Facility

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January, 1984

U.S. \$20,000,000

IBJ

The Industrial Bank of Japan, Limited
London

Floating Rate London-Dollar Negotiable
Certificates of Deposit due 30th July, 1986

In accordance with the provisions of the Certificates, notice is hereby given that for the six month Interest Period from 30th January, 1984 to 30th July, 1984 the Certificates will carry an Interest Rate of 10.5% per annum. The relevant Interest Payment Date will be 30th July, 1984.

Credit Suisse First Boston Limited
Agent Bank

U.S. \$30,000,000

IBJ

The Industrial Bank of Japan, Limited
London

Floating Rate London-Dollar Negotiable
Certificates of Deposit due 30th January, 1987

In accordance with the provisions of the Certificates, notice is hereby given that for the six month Interest Period from 31st January, 1984 to 31st July, 1984, the Certificates will carry an Interest Rate of 10.5% per annum. The relevant Interest Payment Date will be 31st July, 1984.

Credit Suisse First Boston Limited
Agent Bank

INTERNATIONAL COMPANIES and FINANCE

INTERNATIONAL APPOINTMENTS

Worldwide head for Warner Home Video

WARNER HOME VIDEO, the Warner Communications company, has appointed Mr Warren Lieberfarb to head its operations worldwide as executive vice-president and general manager.

Strong first half for Malayan Banking

By Wong Sulong in Kuala Lumpur MALAYAN BANKING, Malaysia's second largest banking group, has reported a strong performance for the half year to December, with after-tax profits rising by 34 per cent to 50.6m ringgit (U.S.\$ 21.7m).

Selwyn Parker on the financial services plans of an insurance major Transformation at NZ South British

NEW ZEALAND South British, the largest private general insurance company in Australia, is planning to launch a full range of financial services similar to Merrill Lynch and Prudential Bache.

At first NZ South British will offer its tailor-made bundle of financial packages within its own existing offices in Australia, New Zealand, Asia, and the Pacific.

money and time than had been expected. Out of the blend of two conservative insurance companies, both over a century old, has emerged a new corporate structure of more or less autonomous divisions.

1983-84 financial year, are the fastest-growing ones. But the general insurance improvement heavily boosted half-year post-tax earnings of over NZ\$21m— an annualised rate of 18.20 per cent on shareholders' funds.

Signs of revival in KD bond market

By Margaret Hughes Recently in Kuwait THE KUWAITI dinar bond market is slowly coming back to life and even foreign borrowers are once again discreetly tapping the market.

Porsche will wait to choose U.S. partner

BY RUPERT CORNWELL IN BONN The deal comes in two parts. First, Cold Storage Malaysia (CSM), a subsidiary of Cold Storage Holdings (CSH), will buy Fima Supermarkets, which is 70 per cent held by CSH and 30 per cent by Fima, a Malaysian Government agency.

Saga looks for Nkr 70m profit

BY FAY GJESTER IN OSLO SAGA PETROLEUM, the independent Norwegian oil company, expects to make a profit, after year-end allocations, of about Nkr 70m (\$8.9m) on its operations in 1983, according to managing director Mr Asbjørn Larsen.

After being closed down in late 1979, when dollar interest rates squeezed domestic liquidity, the market was re-opened in 1980 under more restrictive guidelines.

Advertisement for Citicorp Person-to-Person, Inc. featuring \$350,000,000 in 12 1/2% Guaranteed Subordinated Capital Notes Due January 15, 1996. Lists various financial institutions as agents.

UAE in further moves to protect bank depositors

BY OUR ABU DHABI CORRESPONDENT BANKS in the UAE will be required to set up a depositors' protection fund before distributing dividends, increasing their capital, or making new share issues, and will be required to consult the Central Bank before finalising or publishing their annual accounts.

Blue Circle South Africa down

BLUE CIRCLE, the South African cement and engineering group which is 55.1 per cent UK-owned saw turnover fall to R296m (U.S.\$234m) in 1983 from R305m and pre-tax profit to R13.2m from R20.3m, reports our Johannesburg correspondent.

North American quarterly results

Table with multiple columns showing quarterly financial results for various companies including AMP, FINANCIAL CORP OF AMERICA, IMPERIAL OIL, CANADA PACKERS, G. D. SEABE, DOMINION TEXTILE, DUNCE POWER, GERRISON, BIRSEBACH, GULF CANADA, and LOUISIANA LAND AND EXPLORATION.

Handwritten Arabic text at the bottom of the page.

MORGAN STANLEY

Meet our 21 new Managing Directors.

They represent Morgan Stanley's commitment to providing superior service to clients and customers. Some play key roles in new areas such as commodities, futures, options, tax-exempts and mortgage-backed securities. Others have helped us expand our investment banking, equity and fixed income sales and trading activities, research, and management information systems.

Simply put, they're some of our best investments in the future.

Left to right standing:

Richard A. Smith	convertibles/international securities
Robert A. Metzler	equity sales
Michael A. Brown	corporate bond trading
Richard B. Berens	equity block trading
Dennis G. Sherya	equity research
Louis J. Carr, Jr.	equity sales/trading
William B. Cook	management information systems
David M. Deutch	tax-exempts
Donald P. Brennan	investment banking/forest products
Charles G. Phillips	investment banking
John W. Barr	investment banking/utilities

Scott C. Newquist
Michael C. Brooks
Robert F. Schiffer

leveraged buyouts
investment banking/technology
mortgage-backed securities

Left to right seated:

Robert B. Allardice, III	risk arbitrage
James Berkowitz	OTC trading
William D. Birch, Jr.	international fixed income
A. Macdonald Caputo	individual investor services
Robert A. Gerard	tax-exempts
Eric J. Gleacher	mergers and acquisitions
Robert B. Feduniak	commodities and futures



Signs of revival in KD bond market

result

UK COMPANY NEWS

Vibroplant recovers and lifts interim

A SUBSTANTIAL recovery has been made by Vibroplant in the half year ended September 30 1983 and the current six months are expected to provide a contribution to profits despite problems in VI Leisure. The directors are forecasting a higher dividend for the year. For the first half turnover moved ahead from £7.49m to £10.63m, and profit advanced from £329,000 to £1.32m. This reflects an increase in demand for plant hire and the elimination of losses from Leisure, and pulls the group back to the level of profits enjoyed in the late 1970s. Turnover in plant hire was up 28 per cent to £9.1m and profits fetched £1.31m against £906,000 while Leisure traded at a small surplus, compared with a loss of £578,000. Leisure makes video juke boxes for clubs and pubs. The directors report that since September Vibroplant has recommenced to trade satisfactorily and should be able to report hire figures for the second half in line with last year. With regard to Leisure, the agreed level of orders from London and Liverpool Trust has not materialised; as a result Leisure may incur significant losses in the second half which are at present difficult to quantify. Despite the latter the directors are confident that there will be an overall contribution to group profit from the second half, and that steps being taken will be successful in preventing further Leisure losses beyond the end of the financial year. The interim dividend is lifted from 8.625p to 9p and the directors expect to recommend a final of not less than 5p compared with 4.6375p. In each of

HIGHLIGHTS

Lex looks at the discussions between Trafalgar House and Scott Lithgow, the ship repair yard, and what the former's strategy may be in this approach before turning to consider an equally surprising purchase of just under 5 per cent—in Powell Duffryn by Hanson Trust. The column then looks at the moves to transform the plantation sector. Finally Lex comments upon the Hong Kong property market. Elsewhere the Arthur Bell-Gleneagles battle roles on while Bell acquires a U.S. distributor, and an unexpected deal of the day was gas appliance group, Valor, taking a 29.9 per cent holding in Dreamland. Back onto company news, Vibroplant is making a recovery but in the same breath issuing warnings about the second half, while TV South surprised the analysts with a 54m swing into the black.

construction equipment plant hire Vibroplant's controlling Pilkington family embarked upon diversification into video juke boxes. Yet rather than providing a new line of profits the directors have been fighting off a veritable disaster. The venture made a small profit in these figures for the first time after some £1m of red ink splashed over the last couple of years. The directors' assertion that the loss is down to £730,000 or so after tax relief is neither here nor there. Did they go into juke-boxes to run up a tax efficient loss? The link with London and Liverpool has just compounded the problems. They had hoped for 3,000 units to be sold. That may have seemed optimistic with hindsight but perhaps deserving more than the 300 actually sold. Now the second half will see trading losses of £250,000 plus, perhaps, whopping write-downs on £350,000 of stock. Construction equipment should make a profit of £900,000 in the second half though video could punch a great hole in that. The 8.6 per cent yield is a small prop at 170p. Even with a thin market the price seems to be held up by invisible threats.

Gable House set to 'comfortably exceed' £0.5m

At the annual meeting of Gable House Properties shareholders were told that pre-tax profits for the year to June 30, 1984 would "comfortably exceed" the prospectus forecast of £500,000. In a statement last December with the preliminary results for 1982/83, showing profits up from £60,000 to £310,000 at the pre-tax level, the directors were confident that figures for the current year would exceed the forecast—the company's shares are traded on the USM. Referring to Park Saint James, the meeting was told that the company had now accepted an offer of £700,000 for the complete sixth floor of the scheme, and assuming this agreement proceeded satisfactorily through legal implementation, this brought total pre-sales to £2.32m. Shareholders were informed that the proposed letting of College House, St Albans, had proceeded satisfactorily and Hirshfields had been instructed to carry out a re-valuation of the completed investment. The expected re-valuation surplus would be reflected in the 1984 accounts.

Nova Knit reorganisation benefits coming through

FOR the six months ended September 30 1983 profit of Nova (Jersey) Knit has fallen from £250,000 to £85,000, which, the directors claim, is in line with expectations. They are cutting the interim dividend from 2.5p to 1p net. However, management accounts for the following three months indicate that the economies of scale expected following the agreement with W. E. Saxby (Nottingham) "have been achieved and the decline in profits reversed." In a reorganisation of its dy-

Textured Jersey ahead midway to £193,000

INCREASED PRE-TAX profits were achieved by Textured Jersey for the opening half despite the outbreak of a serious fire at a factory at Corby. Profits rose from £151,000 to £193,000 for the six months to the end of October 1983. While it is inevitable that sales for the year will be seriously affected by the aftermath of the fire, the directors say that sales and profits will comfortably exceed levels achieved last year, when full-year pre-tax profits fell to £268,000 (£245,000). First half turnover of this knitted jersey manufacturer came to £6.66m (£5.3m). The net interim dividend has been held at 1.75p—in the last full year a total of 4p was paid. Operating profits rose from £377,000 to £432,000 from which depreciation took £250,000 (£250,000) and interest, £9,000 (same). Tax amounted to £48,000 (£14,000).

Surge halftime for Harvey & Thompson

As indicated at the annual meeting, pre-tax profits of Harvey & Thompson, pawnbroker, have shown a marked increase with six-month figures up from £32,000 to £187,000 to December 31 1983. For the whole of the previous year profits were £162,000. Mr R. A. Galliers-Pratt, chairman, says there has been a satisfactory increase in the company's loan book during the period which should lead to a further increase in profits during the second six months. Turnover of this USM concern advanced from £472,000 to £676,000. The chairman adds that in view of the "continued progress" of Harvey, the directors are paying an interim dividend of 1.5p—last year's single, final payment, was 1.5p. Trading profits amounted to £248,000 (£177,000) and profits were after interest of £59,000, against £45,000. Tax took £30,000 (£1,000) and after an extraordinary credit, last time of £18,000, the attributable balance came through ahead from £49,000 to £157,000. Earnings per 20p share were 4.99p (3.97p). The company's new shop in Birmingham got off to a good start

TV South £4.46m in its first full year

IN ITS first full year of broadcasting, Television South has made a pre-tax profit of £4.46m, compared with a loss of £1.1m. However, the figures are not comparable. The 1982 result, which was for a 17-month period, was restated and included only 10 months of broadcasting. Turnover during the year to October 31 1983, improved by almost 60 per cent to £81.42m, compared with £52.61m. However, in line with this improvement, other charges have increased, the largest being the group's subscription towards the cost of Channel 4, which is £2.15m higher at £1.61m. The Exchequer Levy for the year was £2.35m (£1.43m) and tax climbed to £1.45m (£69,000). The interest charge was £171,000 lower at £190,000. In his statement, Lord Boston, the chairman, reports that advertising revenue increased by 25 per cent over the period and his available advertising time continues to be fully sold. A first dividend of 2p a share is being recommended. Earnings amounted to £4.7m, or 11.32p—the company's shares are traded on the Unlisted Securities Market.

TV South's £5.5m swing into the black was rather better than the City had expected, so the non-voting shares rose 10p to 100p on the results. Advertising revenue increased by 25 per cent to £7.7m, while programme sales rose from £1.8m to £1.2m at £1.9m. Revenue from the new Maidenhead studios has allowed measurable cost savings. Advertisers appear to have been attracted by TV's split into two sections, which has led to a quadrupling in local advertising revenue. The newly developed afternoon viewing slot has also provided an uplift in advertising revenue. TV has a higher share of top socio-economic classes in its region has made its advertisers major beneficiaries of the upturn in consumer spending. In the current year, the increase in TV South's channel four subscription should tell off a little, but the way ahead of the way ahead of revenue from that source is a downward blip in December, advertising revenue has picked up strongly, indicating a pre-tax profit rise from £1.9m to £5.5m. That puts the share multiple of 6.4, assuming a 32 per cent tax charge.

Priest Marians
Priest Marians Holdings, property investment company, reported pre-tax profits of £1,596 for the 10 months to December 31, 1983, compared with losses of £26,734 for the preceding 10 months. The figures were after deducting gross interest of £12,517 (£12,112), general expenses and pensions of £9,353 (£9,394), property expenses of £13,532 (£12,453) and a decline in net investment gains of £12,296 (£17,999 losses). Net assets at December 31, 1983, were approximately £170,000, including investments at market value of £160,000 (cost £132,000).

Fleming Overseas
Improved net revenue of £156m against £141m has been shown for the half year to the end of 1983 by Fleming Overseas Investment Trust. Net asset value per 25p share came to 366.1p against 277.4p—at the end of last June the figure was 338p. Gross income came to £3,06m (£2,63m) from which expenses and interest took £1,900,000 (£1,770,000). Tax came to £1.31m (£1,05m), and earnings per share came through ahead from 3.16p to 3.49p.

CIL advances
In the 1983 CIL, the Canadian arm of Imperial Chemical Industries, advanced its net operating income from C\$15.1m to C\$23.9m, equal to 1.36 (82 cents) per share. The figures reflect a recovery in the plastic, plaster and specialty chemicals business. But industrial chemicals, explosives and mining equipment remained depressed, and margins in farm chemicals were tight. Sales totalled \$1.1bn, against \$1.06bn. The directors are expecting a further recovery in 1984 but point out that businesses serving the resources industries, particularly mining and metals, may not improve much until the second half.

Newman-Tonks advances to £3.46m for 15 months

FOR THE 15 months ended October 31 1983 Newman-Tonks Group, metal hardware manufacturer, turned in taxable profits of £3.46m, compared with £2.71m for the previous year, on turnover of £81.57m against £47.12m. Profits and turnover for the 12 months up to July 31 last were £2.52m and £49.38m respectively. As forecast, there is a final dividend of 1.275p per share which lifts the total to 6.375p net for the 15 months (5.1p). In October the directors said that the August to October quarter was traditionally the least profitable, but indications were that figures would be better than budget.

Pre-tax figure for the full period included £968,000 earned by Monarch Hardware and Manufacturing of the U.S. acquired in August 1982, less £400,000 for financing charges and group market development costs in the U.S. Group profits also included £707,000 (£589,000) in respect of Jeavons Engineering, merged with last March. Group operating profits amounted to £4.7m, and the pre-tax profit was after interest up from £221,000 to £422,000, and losses from discontinued activities, £403,000 (£338,000). Tax charge was £927,000, compared with £406,000, and the balance carried forward through little changed at £1.98m (£1.94m) after minorities.

Renwick Group reduced to £722,000 at halfway stage

A REDUCTION in pre-tax profits from £786,000 to £722,000 has been shown by Renwick Group for the first half to the end of September 1983. Turnover of this Paignton, Devon, based travel agent, boat builder and international coal trader slipped from £99.14m to £97.61m. The directors say that turnover and profits from international coal trading were substantially lower than in the first half of the previous year but are expected to recover in the current quarter. At the end of the last full year the directors said that signs of a start to economic recovery would assist in achieving improved levels of profitability. Commenting on the period under review they say that both main projects and travel benefited from an improvement in

Platinum concludes its programme of change

THE board of Platinum, the Stevenage manufacturer of writing instruments and plastic mouldings, yesterday announced the three concluding phases of the re-organisation programme, which started in April, 1982. The company has finalised arrangements for the purchase of the freehold of its Stevenage site, and simultaneously has exchanged contracts for the staged sale of the Stevenage freehold subject to shareholders' approval at the annual meeting—for factory and office development. Platinum will also be moving its writing instrument manufacturing facility to a new purpose-built factory of 45,000 sq ft in Royston, Hertfordshire. This is expected to be fully operational

DIVIDENDS ANNOUNCED

Company	Current dividend	Date of payment	Corr. Div. year	Total last year
Harvey & Thompson Int	1.5	—	—	1.5
Newman-Tonks	1.281	Mar 10	3.45	3.861
Nova (Jersey) Knit	1	April 2	2.8	4
Rne Estates	8	April 6	7	7
Stock Conversion Int	2	Mar 25	7.5	4.75
Textured Jersey Int	1.75	Apr 2	—	—
TV South	2.1	Mar 28	—	—
Vibroplant Int	3	Mar 9	2.83	7.26

Dividends shown pence per share net except where otherwise stated. * Equivalent after allowing for scrip issues. † On capital increased by rights and/or acquisition issues. ‡ USM stock. § Unquoted stock. ¶ For 15 months.

£18,000 (£80,000), extraordinary debits £498,000 (nil), and ACT recoverable £103,000 (£265,000). On a nil distribution basis earnings per 25p share were 10.31p (9.2p) and 9.89p (7.95p) on a net basis. Extraordinary items for the 15 months comprised £444,000 redundancy, severance and removal costs on relocation of activities; £294,000 closure costs of discontinued activities; £47,000 merger expenses, less tax thereon of £379,000. ● comment With a full year's results at Newman-Tonks already in the can, yesterday's 15-month figures add little to the overall picture, especially as the autumn quarter is traditionally the leanest time

of the year. What can be said, however, is that last year's evidence of a small marketplace recovery in engineering and hardware seems to have consolidated itself. Even if this apparent upturn peters out, the company is well positioned to benefit from the rationalisation and reorganisation of the past two years, the costs of which are now historical. Assuming the optimistic alternative on a modest scale, at least £4m pre-tax should be possible along with a small dividend increase. On this basis the shares, at 89p, 2p, are selling on a prospective P/A of less than 5 (low tax charge), while the yield is over 12.5 per cent—hardly a demanding rating for a company which is now on an even keel.

Commercial Bank of Wales pre-tax rise

Following an increase from £402,000 to £625,000 at the halfway stage, pre-tax profits of unquoted banking company Commercial Bank of Wales finished 1983 ahead at £1.45m, compared with £716,000. However, after a tax charge of £463,000, compared with a £264,000 credit, the net figure was well down at £386,000, against £1.24m previously. The directors say that the tax credit, last time reflected the release of deferred tax previously provided in respect of leased assets. They add that the provision of 25 per cent of potential tax liability in respect of such transactions continues to be maintained. Group business increased significantly during the year with improvements in profitability of both banking and consumer credit facilities. Before interest, group profits were £7.65m, compared with £8m, and the dividend is increased from 8p to 7.5p. Last August directors said that the second half of the year was expected to be much in line with the first, with perhaps some small improvement in both the company's banking and instalment credit profits. They added that there was little "hard evidence" of growing industrial activity, although when it arrived demand for finance was expected to be heavy as cash flow created by de-stocking and lower activity had been absorbed in financing losses an exceptional items by many businesses. The directors intend to apply for a listing of the company's ordinary shares as soon as formalities can be completed.

GUINNESS PEAT

Points from the Chairman's Statement:
The Right Hon Lord Croham GCB

- "Late last Summer the Group's fundamental reorganisation was completed."
- "Guinness Peat looks forward confidently to a level of profits in the current year that begins to reflect its real potential."

Guinness Peat Group plc

Guinness Mahon & Co - Merchant Bankers

Fenchurch Insurance Holdings - Insurance Brokers

Guinness Peat Securities
Financial and Management Services, Property,
Energy, Development Capital, International
Trade and Project Management.

If you would like a copy of the 1983 Report & Accounts,
please write to:

The Secretary, Guinness Peat Group plc
32 St Mary at Hill, London EC3P 3AJ

Grindlays Eurofinance B.V.
U.S. \$ 100,000,000
Guaranteed Floating Rate Notes 1994
Guaranteed on a subordinated basis by



Grindlays Bank p.l.c.
In accordance with the provisions of the Notes, notice is hereby given that the interest period 1st February, 1984 to 1st August, 1984 the Notes will bear an interest rate of 10 1/4% per annum. The interest payable on the relevant Interest Payment Date, 1st August, 1984 against Coupon No. 1 will be U.S. \$511.88.
Agent Bank
Grindlays Brands Limited

STOCK CONVERSION

PROPERTY INVESTMENT, DEVELOPMENT & DEALING

Half Year to 30th September 1983

- * Profit on ordinary activities before taxation up by 12% from £6,895,000 to £7,746,000.
- * Profit on ordinary activities after taxation and minorities up by 21% from £3,072,000 to £3,724,000.
- * Earnings per share up by 21% from 5.87p to 7.11p.
- * Interim Dividend up by 14% from 1.75p to 2.00p per share.

Copies of the full interim statement may be obtained from the Secretary,
THE STOCK CONVERSION AND INVESTMENT TRUST plc
130 Jermyn Street, London SW1Y 4UP. 01-833 7361.



U.S. \$150,000,000
CHASE MANHATTAN OVERSEAS
BANKING CORPORATION
FLOATING RATE NOTES DUE 1993

For the six months' 31st January 1984 to 31st July 1984
In accordance with the provisions of the Notes, notice is hereby given that the rate of interest has been fixed at 10 1/4 per cent and that the interest payable on the relevant interest payment date, 31st July 1984 against Coupon No. 12 will be U.S. \$51.19.
Agent Bank: Morgan Guaranty Trust Company of New York, London

Handwritten Arabic text: محمد صالح المنجد

Companies and Markets

BIDS AND DEALS

First half £0.9m rise for Stock Conversion

PRE-TAX profits of Stock Conversion and Investment Trust rose by £81,000 to £7.75m for the six months ended September 30, 1983 and the interim dividend is being lifted by 0.25p to 2p net per 25p share.

The amount of final will be determined in the light of the full year result and the circumstances prevailing—a total distribution of 4.75p was paid previously.

Macanie defers stock exchange

Because of the possibility of adverse tax effects, Macanie (London) has adjourned the proposed exchange of stocks with Courtauld, its parent company.

The directors explain that recently published draft tax legislation could lead to the classification of the stock being offered in exchange as a "deep discount issue."

Ruo Estates

On turnover that was up by less than 50 per cent, Ruo Estates Holdings managed to double its pre-tax profit for the year ended June 30 1983.

Steelley

Steelley intends to build a 50m brick capacity works on a site in North Staffordshire, producing simulated hand-made bricks.

0222-495507 HOT-LINE for Company Searches

Table with 2 columns: Search and, Price. Includes items like Search and (12.50), Search only (9.50), Accounts only (7.50), Fiche (2.50), and LADBROKE INDEX.

H & C £20m Malaysian sale talks

BY DAVID DODWELL

Harrison & Crossfield, the plantation, chemicals and timber group, has begun talks which may lead to the sale of stakes—held directly or indirectly—in 10 Malaysian plantation companies.

The move is aimed at further strengthening local control of Malaysian plantation companies which were once part of the Harrison & Crossfield group in Malaysia.

It follows directly from the sale to Permodalan Nasional Berhad, Malaysia's national investment agency, of its controlling interest in Harrison & Crossfield's Malaysian Plantations (HMP) in September 1982.

Caparo aid for Brockhouse

BY DAVID DODWELL

MR SWAJ PAUL'S Caparo group revealed yesterday that it has offered to inject £5m of new share capital into Brockhouse.

Mr Reg Parkes, chairman of Brockhouse, said yesterday that he had not had the opportunity to see Caparo's proposals in detail and was therefore not in a position either to recommend or contest the terms.

Bell in £12m U.S. expansion

BY DAVID DODWELL

Arthur Bell, Scotch whisky distributor, has agreed to acquire Wellington Importers to act as its distributor in the U.S., in a deal worth \$16.5m (£11.7m).

Wellington, based at Lake Success in New York, imports and distributes spirits into the U.S. and owns the brand names Barbell and Boucheron.

Valor lifts Dreamland stake

BY CHARLES BACHELOR

Valor, the manufacturer of gas heaters and cookers, has acquired a further 5.9m shares of Dreamland Electrical Company, the electric blanket maker.

Mr Michael Montague, Valor chairman, said: "We are looking at spreading further into the electrical market and this block of shares was an opportunity."

Maynards defence forecast

BY CHARLES BACHELOR

Maynards, the North London sweet, toy and retail newsagents group, currently fighting a partial bid worth £8.5m from former supermarket chief Mr Lew Cartier, has forecast a total 1984 dividend of not less than 10.5p against 9.75p last time.

In a letter to shareholders Maynards said that in the sweet-making field it had launched 13 new products over the past two years and improved the presentation of many lines.

Maynards listed other recent achievements as the gaining of the exclusive UK distribution rights for the Norwegian Confectionery Company, increases in export sales and "own label" products to major UK retailers.

In a deal worth over £3.3m in cash the Ladbroke Group has taken over a luxury apartment development at Hyde Park Square, London, with a 99-year leasehold interest.

London & Leeds will also complete luxury apartments at 100 Piccadilly and at the Savoy Hotel in August.

Mr Ernest Sheavills, London & Leeds' assistant managing director, says demand by U.S. Far East and Middle East purchasers for high-quality homes in London's most exclusive areas is stronger than ever.

Share values in several of the companies leapt yesterday—Sogomana by 85p to 600p, Castlefield by 65p to 850p, Dorana by 25p to 150p, Kinnel by 85p to 300p, Kellas by 80p to 280p, Holbrook by 85p to 300p.

The aggregate value of the companies, in terms of market capitalisation, is about £61.5m. However, a substantial cross-selling meets the true market capitalisation is lower.

Mr Tom Prentice, Harrison's chairman said in London yesterday that discussions on price for each of the companies have yet to take place. HMP is likely to pursue talks with each company separately.

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Notice of Redemption

Continental Telephone International Finance Corporation

5½% Guaranteed Debentures Due 1988 NOTICE IS HEREBY GIVEN that, pursuant to the provisions of the Indenture dated as of March 1, 1968 under which the above described Debentures were issued, Citibank, N.A., as Trustee, has drawn by lot, for redemption on April 1, 1984, through the operation of the sinking fund provided for in said Indenture, \$471,000 principal amount of Debentures of the said issue of the following distinctive numbers:

Table with columns: COUPON DEBENTURES OF \$1,000, PRINCIPAL AMOUNT OF PAYING, and various numerical identifiers.

The Debentures specified above are to be redeemed for the said sinking fund at the office of the Trustee, 111 Wall Street, in the Borough of Manhattan, The City of New York, State of New York, the main offices of Citibank in Amsterdam, London, Paris, Frankfurt/Main, Milan or Brussels or at the office of Kredietbank S.A. Luxembourg in Luxembourg, as the Company's paying agents, and will become due and payable on March 1, 1984, at the redemption price of 100 percent of the principal amount thereof plus accrued interest on said principal amount to such date.

The said Debentures should be presented and surrendered at the offices set forth in the preceding paragraph on the said date with all interest coupons maturing subsequent to the redemption date. Coupons maturing on March 1, 1984 should be detached and presented for payment in the usual manner.

For CONTINENTAL TELEPHONE INTERNATIONAL FINANCE CORPORATION By CITIBANK, N.A., Trustee January 31, 1984

NOTICE OF REDEMPTION

To the Holders of GOLD INTERNATIONAL FINANCE N.V.

9¾% Guaranteed Notes Due 1985 Issued under Indenture dated as of March 1, 1979

NOTICE IS HEREBY GIVEN that pursuant to the provisions of the above-mentioned Indenture, \$20,000,000 principal amount of the above described Notes has been selected by lot for redemption on March 1, 1984 at the principal amount thereof together with accrued interest to said date, as follows:

Table with columns: Outstanding Notes of U.S. \$1,000 Each of Prefix "M" Bearing Serial Numbers, and a list of numbers.

Table with columns: Also Outstanding Notes of U.S. \$1,000 Each of Prefix "M" Bearing the Following Serial Numbers, and a list of numbers.

On March 1, 1984 the Notes designated above will become due and payable in such coin or currency of the United States of America as at the time of payment shall be legal tender for the payment of public and private debts. Said Notes will be paid, upon presentation and surrender thereof with coupon due March 1, 1985 attached thereto, at the option of the holder either (a) at the corporate trust office of Morgan Guaranty Trust Company of New York, 30 West Broadway, New York, New York 10015, or (b) at the main office of Morgan Guaranty Trust Company of New York in Brussels, Frankfurt/Main, London or Paris or the main office of Credito Romagnolo S.p.A. in Milan, Bank Romagnolo S.p.A. in Amsterdam, Banque Internationale à Luxembourg S.A. in Luxembourg or Swiss Bank Corporation in Basel. Payments at the offices referred to in (b) above will be made by check drawn on a dollar account, or by transfer to a dollar account maintained by the payee, with a New York City bank.

Coupons due March 1, 1984 should be detached from the Notes and collected in the usual manner. On and after March 1, 1984 interest shall cease to accrue on the Notes herein designated for payment.

GOLD INTERNATIONAL FINANCE N.V. By MORGAN GUARANTY TRUST COMPANY of New York, Trustee Dated: January 26, 1984

Daily Mail and General Trust PLC Statement by Viscount Rothermere, Chairman

The last year has seen the return of a Conservative Government for a second term, and the start of economic recovery. There is a steadily growing confidence in the British economy. Even so we can report that Net Revenue from our general portfolio has increased by £97,000.

Inflation is much more under control. Interest rates are stable with hopes of their reducing further, and those companies which had to cut back staff and inventories are now the better equipped to take advantage of the upturn.

What there have been few changes in our U.K. portfolio, we have agreed with our American advisers that the U.S. Stock Market was too high and we took the opportunities as they occurred to liquidate some of our U.S. holdings and have retained the dollars on short term deposit.

These changes have meant a small reduction in Unfranked Income from North America, more than offset however by an increase in Other Interest. But for dividend timing alterations, the increase in Franked Income would have been more than marginal.

After allowing for the increased dividend from Associated Newspapers Holdings p.l.c. the net earnings were 34.8p per share, against 31.4p per share, and the Board is recommending, because of the Company's close Company status for taxation purposes, that the total distribution on the Ordinary and X Ordinary Non-Voting Shares be 34.5p per share.

The value of our holding in our Associated Company has increased markedly over the last year—as have all newspaper shares with interests in Reuters. However, the financial results have themselves shown a satisfactory improvement.

Slough Estates plc (Registered in England No. 167591)

Issue of up to £33,343,418 12% per cent. Unsecured Loan Stock 2009

(In connection with the Offers by Slough Estates plc to acquire the entire issued share capital of Allhall London Properties PLC (Allhall) and the issued Ordinary share capital of Guildhall Property Company PLC not owned by Allhall)

The Council of the Stock Exchange has admitted the above Stock to the Official List. Particulars of the Stock are available in the Extra Statistical Services and copies of such particulars may be obtained during normal business hours (Bank Holidays and Saturdays excepted) up to and including 15th February, 1984 from:

Table with 3 columns: Sheppards and Chase, Charterhouse Japhet plc, Rowe & Pitman. Includes addresses like 14-18 Gresham Street, 1 Paternoster Row, and 39/45 Finsbury Square.

MINING NEWS

APPOINTMENTS

Cominco expecting a better year

BY KENNETH MARSTON, MINING EDITOR

FOURTH quarter 1983 results now flowing from the transatlantic natural resource majors make a mixed showing. But at least Canada's Cominco metals and chemicals group says that it expects an improvement this year on the basis that economic growth in North America is expected to continue and other western economies should improve.

Metals Ex and North Kalgurli improvements

AUSTRALIA'S Metals Exploration reports a half-year net profit of A\$198,000 (£128,000) compared with a loss of A\$202,000 a year ago. At the same time, the turnover dropped to A\$543,000 from A\$722, reflecting the policy of reducing operations pending a recovery in metal markets. Because of low prices for nickel, the small, but good grade, Neopan in Western Australia remains closed.

Associated Pulp boosts NBH profits midterm

INVESTMENT INCOME has been supplemented as the major contributor to earnings of Australia's North Broken Hill Holdings by profits from Associated Pulp and Paper Mills, which was acquired last February.

Senior posts at Chesebrough-Pond's

CHESEBROUGH-POND'S has made the following appointments: Mr John P. Freeland has been promoted to financial director. He has been with Chesebrough-Pond's since 1971. His predecessor as financial director, Mr Anthony P. Deasey, vacated the position in June 1983 upon his promotion to the area financial director post covering the international grouping of Canada, UK and Ireland.

Granville & Co. Limited

Table with columns: 1983-84, Company, Price Change, Gross Yield, P/E, Fully. Lists various companies and their financial metrics.

Mining News in Brief

COMMERCIAL PRODUCTION from a 50% property near Pula in the state of Kelantan in Malaysia is expected to start in early 1984, according to Malaysia Mining Corporation (MMC).

European vice president of Lee Apparel UK

Mr Roy Freeand has been appointed managing director of Lee Apparel UK. Mr Freeand has been with Lee Apparel UK since 1971. He was previously managing director of Lee Apparel UK.

Contracts

NORWEST HOLST has received contracts worth £7.7m for a new 150,000 sq ft office building. The building is to be built horizontally and loaded on to a barge. It will be installed before the end of the year.

DeVoe-Holbein International N.V.

Notice is hereby given to shareholders that the Common Shares of the Company have been split to the effect that each share of US \$ 0.25 par value has become two and one half (2½) shares of US \$ 0.10 par value.

Board Meetings

Table listing board meetings for various companies, including dates and locations.

Base Lending Rates

Table listing base lending rates for various banks and financial institutions.

Advertisement for Toronto Dominion Bank, New York Branch, featuring a \$50,000,000 Floating Rate Certificate of Deposit due January 1987. Includes Moody's Aaa and Standard & Poor's AA+ ratings.

Advertisement for TD Bank, featuring the Toronto Dominion Bank logo and contact information for the New York Branch.

Senior posts at Chesebrough-Pond's

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Tuesday January 31 1984

WALL STREET

**Reagan role
 in rally is
 short-lived**

PRESIDENT Reagan's confirmation that he will seek re-election to the White House this autumn proved little solace for Wall Street, where a further bout of selling took the stock market down to its lowest level for two and a half months. However, a rally in the final half hour cut losses by about one third, writes Terry Byland in New York.

The market opened higher but swiftly turned down when the sellers reappeared. Increased selling in the latter part of the session drove the Dow Jones industrial average down by more than 12 points at one time, before some bargain hunting in the final 30 minutes left the Dow Jones industrial average at a closing level of 1,231.52, a net 6.48 down. Turnover was heavy, with 102m shares traded.

Views of the outlook for interest rates continued to diverge, with some quarters believing that the slowing down in economic growth will permit rates to ease, while others see a tightening of Federal Reserve credit policies this year.

With a number of factors urging caution this week, bond prices held steady for much of yesterday's session. The

Fed's Open Market Committee met yesterday and will convene again today.

On balance, the market expects little change in Fed policies to emerge from the meetings. But tomorrow is expected to bring details of the Treasury's \$15bn-\$18bn funding programme for the next quarter, which could put upward pressures on interest rates.

The stock market opened with a burst of strength, spurred on by Friday's news of a \$2.7bn fall in M1 money supply for the week. Trading was brisk, but buyers were mostly those needing stock to meet selling deals made during last week's fall in the market.

When these professional operations were completed, selling recommenced and prices fell smartly. With the final quarter reporting season for 1983 now half completed, the stock market is looking at a downturn in profits from the previous quarter, which has undermined the prospects for an earnings-driven gain in the market.

Once again, IBM gave ground, shedding 8 1/4 to \$113. Major institutions have been selling IBM stock, attracted by the sizeable profit available on their holdings.

Other leading issues to meet fresh selling pressure included General Electric, 5 1/4 off at \$53, Minnesota Mining and Manufacturing, 3 1/4 down at \$78, Hercules 1 1/4 lower at \$33 1/4 and Motorola, 1 1/4 down at \$120 1/4.

Selling of both airline and railroad issues contributed to a fall of more than 3 per cent in the Dow Jones transportation average.

Top of the active list by a wide margin was Texaco, after a 5.1m share block changed hands, putting the price \$2 1/4 up at \$37 1/4. Investors took the view that Texaco's \$90m sale of some overlapping assets of Getty Oil will ensure that the merger goes through without anti-trust problems.

Energy and technology issues remained active. Wang Laboratories, 5 1/4 up at \$30 1/4 and Te Com Communications, 3 1/4 off at \$22 1/4, were prominent spots.

In other sectors of the New York Stock Exchange, the American Stock Exchange and the Nasdaq over-the-counter market, prices showed widespread falls.

Texas Instruments, 1 1/4 off at \$130, U.S. Steel, 5 1/4 down at \$30 1/4, and Monsanto, 1 1/4 off at \$95 1/4 were among those to lack support.

The firm sector was oils, still hoping for further bid moves at prices which would benefit both the low priced domestic groups likely to be the targets, and the major oil companies, likely to be leading the buying.

In the credit markets, prices were better where changed but there was a general inclination to await Wednesday's news on Treasury funding.

At 10 1/2% the key long bond yielded 11.75 per cent, having fallen 1/2 from Friday's closing price after the money supply announcement.

The Federal Reserve helped the short end of the market with \$1.5bn customer repurchases, when the federal funds rate touched 9 1/4 per cent. Treasury bill rates barely changed.

TOKYO

**Electricals
 dim after
 early spark**

SELECTIVE buying of blue-chip issues persisted in early Tokyo trading yesterday - particularly among electrical stocks - but the trend tapered off later as investors moved to the sidelines for fear of a corrective fall, writes Shigeo Nishitaki of Jiji Press.

The Nikkei-Dow market average ended the morning session just over 63 points higher than last week's close, but lost strength gradually, closing the day at 10,235.73, up 29.28. Turnover came to 295.10m shares, a substantial decrease from last Friday's 429.88m shares.

The index thus hit an all-time high for the fourth straight session. But declines outnumbered advances 354 to 341, with 144 issues unchanged.

The sizeable decline in the M1 measure of the U.S. money supply for the latest reporting week, combined with President Ronald Reagan's announcement of his intention to run for re-election, touched off expectations of a rally on Wall Street later yesterday. As a result, active buying of blue chips carried over from last week.

Among notable gainers was Sony, which had been out of investor favour because of a slack performance in its video cassette recorder division. Sony advanced ¥250 on one stage and ended ¥2000 higher at ¥4,000, regaining the ¥4,000 level for the first time since November 1982.

Matsushita Electric Industrial rose some ¥170 to ¥2,030 in early trading, but the profit-taking left a closing ¥1,990, a gain of ¥30. NEC added ¥30 to ¥1,540 and Canon ¥20 to ¥1,590.

Nissan Motor climbed ¥24 to ¥765 on reports, unconfirmed at the time, that it had decided to produce a small passenger car in Britain. Trading volume was small, however.

The market lost ground in the afternoon, discouraged by growing investor concern over a reactionary decline and

increased sales of blue-chip electricals for profits.

TDK jumped ¥200 in morning transactions, but finished ¥60 lower at ¥6,640. Hitachi shed ¥17 to ¥881 and Pioneer Electronic ¥60 to ¥3,790.

Conversely, speculative issues drew interest, with Aoki Construction rising ¥30 to ¥810, Arabian Oil ¥180 to ¥5,280 and Denki Kagaku Kogyo ¥21 to ¥474.

The bond market remained lacklustre. Although some corporations with surplus funds bought long-term issues, other investors generally adopted a hands-off attitude.

The yield on the barometer 7.5 per cent government bonds, maturing in January 1983, remained unchanged from last week's close at 7.415 per cent.

LONDON

**Nervousness
 edges leaders
 to sidelines**

SPECULATIVE activity highlighted yesterday's first session of a new fortnightly trading account in London equity markets. Leading shares were pushed to the sidelines and became highly nervous late in the day.

Reflecting the lack of institutional enterprise, top-name shares were unable to maintain an early extension of Friday's after-hours strength and the FT Industrial Ordinary index finished the day 7.3 lower at 832.2.

Blue chip industrial, which had recently attracted above average support, began to look tired, although little selling developed. Hawker Siddeley encountered fresh American demand and, helped by vague talk of a possible transatlantic bid, surged higher initially and closed up 8p at 414p after 424p.

The electrical sector's weakness was in fact one of the principal factors leading to a nervous after-hours trade in equities as a whole.

Gilt-edged securities traded quietly but moved higher in line with Life market indications.

Longer-dated stocks gained 1/2 in places and the government broker ran

out of supplies of the recently created £100m tranche of Treasury 9 1/2 per cent 1989, at 9 1/4; he remained open to bids for stock of Treasury 9 1/2 per cent 1988 and Treasury 9 per cent 1982/96, tranches of which were also made available to the market on last Tuesday.

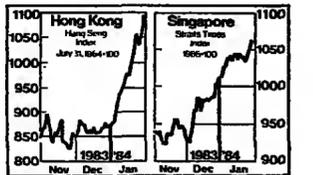
Details, Page 29, Share Information Service, Pages 30-31.

HONG KONG

THE STRONGEST showing so far this year followed one-point prime rate cuts by Hong Kong banks for the second successive Monday. The Hang Seng index soared 42.26 to a six-month high of 1,097.63, and dealers expected that resistance at the 1,100 level would be offset by a bullish view of the local property market expressed later by the colony's valuation commissioner.

Property-related issues fared well ahead of this: Cheung Kong put on 50 cents to HK\$9.95, Swire Properties 15 cents to HK\$6.70 and Hongkong Land 40 cents to HK\$4.30.

The rate cuts were adjudged no strain on the banks. Hongkong and Shanghai added 20 cents to HK\$8.80 and Hang Seng 50 cents to HK\$45.25.

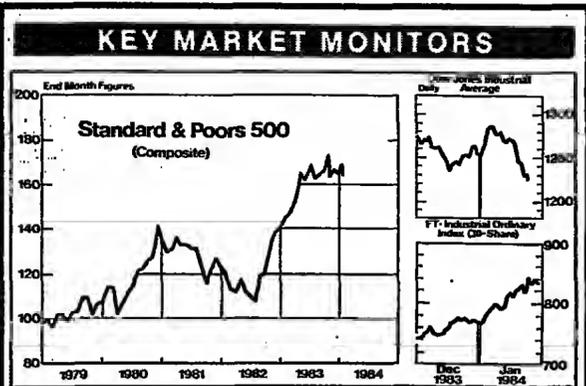


SINGAPORE

ANOTHER active session took Singapore further upward as the Chinese new year approached, but profit-taking was felt amid the buying support.

The Straits Times industrial index rose 12.31 to 1,063.88, while the wider SE industrial/commercial index put on a more moderate 2.41 to 804.31, both new peaks.

Supreme Corporation, the day's most active, firmed 2 cents to S\$2.15. Chuan Hup Marine jumped 16 cents to S\$4.10. Banks were weak, with OCBC off 20 cents to S\$11.50.



STOCK MARKET INDICES			
	Jan 30	Previous	Year ago
NEW YORK			
DJ Industrials	1221.52	1230.00	1164.75
DJ Transport	552.16	567.16	460.37
DJ Utilities	132.71	132.66	123.62
S&P Composite	162.87	163.84	144.51
LONDON			
FT Ind Ord	832.20	839.50	622.70
FT-A All-share	504.11	504.73	395.02
FT-A 500	538.41	540.65	426.45
FT-A Ind	489.65	491.38	400.62
FT Gold mines	534.30	531.50	677.00
FT Govt secs	83.08	82.75	77.02
TOKYO			
Nikkei-Dow	10,235.73	10,180.85	8014.81
Tokyo SE	777.95	773.17	584.80
AUSTRALIA			
All Ord.	closed	765.70	536.60
Metals & Mins.	closed	517.30	489.20
AUSTRIA			
Credit Aldien	55.68	55.83	48.49
BELGIUM			
Belgian SE	147.78	147.74	104.92
CANADA			
Toronto Composite	2480.01	2504.30	2015.70
Montreal Industrials	429.41	433.80	343.77
Combined	416.12	418.80	331.62
DENMARK			
Copenhagen SE	220.55	221.43	103.91
FRANCE			
CAC Gen	172.00	170.10	104.40
Ind. Tendence	113.40	111.90	64.40
WEST GERMANY			
FAZ-Aktien	366.01	365.88	244.87
Commerzbank	1082.80	1082.20	744.00
HONG KONG			
Hang Seng	1097.63	1055.37	899.82
ITALY			
Banca Comm.	223.07	219.55	182.49
NETHERLANDS			
ANP-CBS Gen	177.90	175.50	105.40
ANP-CBS Ind	146.30	144.40	80.50
NORWAY			
Oslø SE	247.53	247.47	125.30
SINGAPORE			
Straits Times	1063.88	1051.57	773.99
SOUTH AFRICA			
Gold	808.20	808.00	1087.80
Industrials	865.10	866.10	816.40
SPAIN			
Madrid SE	closed	109.32	86.12
SWEDEN			
J & P	1560.39	1549.26	1023.70
SWITZERLAND			
Swiss Bank Ind	380.70	380.70	299.40
WORLD			
Capital Int'l	185.20	185.30	158.50
GOLD (per ounce)			
London	\$368.875	\$369.375	
Frankfurt	\$370.00	\$367.00	
Zürich	\$370.25	\$370.00	
Paris (bidding)	\$369.50	\$369.86	
Luxembourg (bidding)	\$369.00	\$368.45	
New York (Feb)	\$370.20	\$369.50	

EUROPE

**Banks and
 insurers
 fare best**

THE REFERENCE points for investors on the European bourses yesterday lay across the Atlantic - in the form of the Reagan candidacy and a \$2.7bn fall in M1 money supply - but ahead of Wall Street's own reaction a reluctance could be felt to commit any sizeable fresh funds.

A third U.S. influence, a weakening dollar as selling pressure developed out of New York, became clear only at or near the close. Nonetheless, earlier indications that no further severe inroads were being made on domestic currencies appeared to aid sentiment.

Banking and insurance issues in many centres underwent something of a revaluation, providing a handful of the day's better gains.

Australian and New Zealand markets were closed for national holidays. The Madrid bourse observed its usual Monday closure.

In the respective sectors, Amsterdam showed ABN up Fl 10 to Fl 445 and Amro Fl 1.70 ahead at Fl 82; Nat Ned Fl 3 stronger at a record Fl 241 and Aeon firming Fl 3.50 to Fl 142.50.

Other prominent advances during an active session were Fl 7.70 for Akzo in chemicals at Fl 123.20, and Fl 8.10 by KLM at Fl 232.80. Domestic bonds put on some 20 basis points.

Deutsche Bank featured Frankfurt with a DM 8 jump to DM 380.50, while BHF was up DM 4 at DM 304. Munich Re added DM 15 to DM 1,345 but Allianz, its associate, eased DM 1.50 to DM 828.50 amid confusion over its U.S. intentions.

Early buoyancy gave way all round to profit-taking, but renewed support emerged later. Bonds firmed too, and the Bundesbank sold DM 16.2m in public paper.

A doubling of capital proposed by Credito Italiano prompted a Milan mark-up of its shares by L520 to L4,870, and expectations of similar moves took Banca Commerciale L1,850 higher to L37,630.

Of the insurers Generale gained L1,000 to L38,800 and Toro L50 to L14,000. Industrials were quieter, with Fiat L30 ahead at L4,080, and bonds were active but mixed.

The financial side was favoured too in a steady Zurich session, where Credit Suisse firmed SwFr 20 to SwFr 2,335 and Zurich Insurance climbed SwFr 200 to SwFr 18,500.

Bonds were quietly steady. An inflow of foreign orders helped. Continued on Page 28

SOUTH AFRICA

BUYING SUPPORT from London helped Johannesburg gold mining stocks, but most slipped from their day's high and in some cases shaded easier.

Buffels held unchanged at R58 as Free State Geduld slipped 25 cents to R42.75. Other minings were largely unchanged. The star performer of the day was Anglo-American Gold with a R3.50 gain to R133.

CANADA

WEAKNESS in gold issues undermined most other resource oriented share sectors in Toronto. Base metal producers were also very prominent in the decline. Some firmness in Montreal industrials and banks offset largely unchanged papers but much more fragile utilities.

**ECONOMIC COMMUNITY
 OF WEST AFRICAN STATES**

Ecowas Telecommunications Project

— Intelcom 1 (phase B)

INVITATION TO TENDER

The executive secretariat of the Economic Community of West African States invites to international tender on 31st January, 1984, under its regional telecommunications project Intelcom 1, Phase B. Facilities to be provided under this invitation to tender are to be financed by the European Investment Bank.

This invitation to tender is for the supply, installation and commission of equipment for two microwave links consisting of the following:

- Lot 1—Kaolack (Senegal)—Banjul (Gambia)—Cacheu (Guinea-Bissau)
- Lot 2—Tambacounda (Senegal)—Mali (Guinea)

The invitation to tender is opened to at least contracting firms from the European Economic Community (EEC) and from the African, Caribbean and Pacific States (ACP) signatories of the second Lome convention.

Documents in English and French for Lot 1 and in French only for Lot 2 are available for inspection and may be obtained from the following addresses:

Ecowas Executive Secretariat
 Department of Transport, Telecommunications and Energy,
 6, King George V Road,
 Lagos, Nigeria
 Telex: 22633 Ecowas Ng

Ecowas Fund
 Avenue Du 24 Janvier opposite Centre Culturel Francais
 Lome, Togo
 Telex: 5339 Cedeao To

British Telconsult
 55, Old Broad Street,
 London EC2M 1RX
 United Kingdom
 Telex: 887523

The payment of U.S.\$500.00 for the tender documents which will be available from 7th February, 1984, must be made by bank order in favour of Ecowas Fund.

Tender proposals in English and French should be sent to Ecowas Fund, P.O. Box 2704, Lome, Togo, to arrive at the latest by 4th June, 1984, at 11.00 hours (local time) or delivered in person at the headquarters of the Ecowas Fund

Tenders will be opened in public on 5th June, 1984, in Lome, Togo, at the headquarters of the Ecowas Fund.

NEW YORK STOCK EXCHANGE COMPOSITE CLOSING PRICES

12 Month High	Low	Stock	Dr	Pr	100s High	Low	12 Month High	Low	Stock	Dr	Pr	100s High	Low	12 Month High	Low	Stock	Dr	Pr	100s High	Low
23 1/2	23 1/2	AAI	1	1	11 1/2	11 1/2	11 1/2	11 1/2	AAI	1	1	11 1/2	11 1/2	11 1/2	11 1/2	AAI	1	1	11 1/2	11 1/2
23 1/2	23 1/2	AAI	1	1	11 1/2	11 1/2	11 1/2	11 1/2	AAI	1	1	11 1/2	11 1/2	11 1/2	11 1/2	AAI	1	1	11 1/2	11 1/2
23 1/2	23 1/2	AAI	1	1	11 1/2	11 1/2	11 1/2	11 1/2	AAI	1	1	11 1/2	11 1/2	11 1/2	11 1/2	AAI	1	1	11 1/2	11 1/2

Kidder, Peabody Securities Limited

Market Makers in Euro-Securities

An affiliate of Kidder, Peabody & Co. Incorporated 1865

New York • London • Paris • Geneva • Zurich • Hong Kong • Tokyo

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AMERICAN STOCK EXCHANGE COMPOSITE CLOSING PRICES

Main table of American stock exchange closing prices, organized in columns by stock symbol and price details.

Continued on Page 28

NEW YORK STOCK EXCHANGE COMPOSITE CLOSING PRICES

Main table of New York stock exchange closing prices, organized in columns by stock symbol and price details.

Continued on Page 28

Notes and footnotes explaining the data and symbols used in the tables.

WORLD STOCK MARKETS

LONDON DEALING

Reform talks search for a rule book

THE LONDON Stock Exchange ruling council will today discuss the type of dealing which will be allowed under the new rules aimed at liberalising trading in overseas securities, writes John Moore in London.

exchange from the effects of restrictive practices legislation.

As a first stage in the dismantling of minimum commissions, the stock exchange council has decided to introduce negotiated rates of commission on overseas securities.

In a series of changes on dealings in overseas securities, the stock exchange council has said that member firms of the exchange will be permitted to form subsidiary companies called "international dealers".

Consortiums of broking firms and jobbing firms together may control an international dealership.

Following amendments to last December's rules, the stock exchange is clarifying the form of trading that may take place in overseas securities.

Bigsood Bishop, the stockjobber or market maker, has held talks with a number of parties with a view to forming a commercial link. No deal has yet been finalised and the firm said yesterday that it was considering "a number of alternatives."

EUROPE

Continued from Page 25

Paris, with advances outnumbering declines two to one. Elf-Aquitaine added Ffr 8 to Ffr 210 but Moët-Hennessy slipped Ffr 22 to Ffr 1,400 as each provided trading results and forecasts. Peugeot strengthened Ffr 14 to Ffr 257.

The focus of a steady Brussels day came after the close, when Petrofina announced improved profits and dividend along with a one-for-10 scrip. Ahead of this it put on Bfr 20 to Bfr 6,900, while movements elsewhere in the market included a Bfr 1,540 gain for UCB in chemicals at Bfr 5,450 and a FCB 70 dip by Vieille Montagne to Ffr 4,360.

A healthy earnings trend among Stockholm banks brought gains of Skr 4 for Handelsbanken at Skr 236 and Skr 3 in SE-Banken at Skr 328 as the bourse had another strong and active day.

Volvo stood out with a rise of Skr 10 to Skr 480 on last week's results, and Pharmacia reversed setbacks of recent days to rally Skr 6 at Skr 316.

Copenhagen suffered from the Danish parliamentary impasse, but Oslo held steady.

CANADA

Table with columns: Stock, Jan 30, Price, +/-, etc. Includes AMCO Int'l, Alcan, Alcan Alum, Alcan Steel, etc.

DENMARK

Table with columns: Stock, Jan 30, Price, +/-, etc. Includes Aarhus Olie, Andelsbanken, Balle Skand, etc.

NETHERLANDS

Table with columns: Stock, Jan 30, Price, +/-, etc. Includes ADF Holding, Agip, Agip Pet, etc.

AUSTRALIA

Table with columns: Stock, Jan 30, Price, +/-, etc. Includes ANZ Group, Arco Aust, Arco Aust, etc.

AMERICAN STOCK EXCHANGE CLOSING PRICES

Large table of American stock exchange closing prices with columns for 12 Month High/Low, Stock, Div. Yld., P/E, etc.

NEW YORK CLOSING PRICES

Large table of New York closing prices with columns for 12 Month High/Low, Stock, Div. Yld., P/E, etc.

FRANCE

Table with columns: Stock, Jan 30, Price, +/-, etc. Includes Empunt 45, Empunt 75, etc.

NORWAY

Table with columns: Stock, Jan 30, Price, +/-, etc. Includes Bergens Bank, Bortogard, etc.

SPAIN

Table with columns: Stock, Jan 27, Price, +/-, etc. Includes Bank Bilbao, Bank Exterior, etc.

HONG KONG

Table with columns: Stock, Jan 30, Price, +/-, etc. Includes Bank East Asia, Cheung Kong, etc.

GERMANY

Table with columns: Stock, Jan 30, Price, +/-, etc. Includes Allianz, Bayer, etc.

SWEDEN

Table with columns: Stock, Jan 30, Price, +/-, etc. Includes Alfa-Laval, Astra, etc.

SINGAPORE

Table with columns: Stock, Jan 30, Price, +/-, etc. Includes Boustead Bhd, Cold Storage, etc.

JAPAN

Table with columns: Stock, Jan 30, Price, +/-, etc. Includes Ajinomoto, Alps Electric, etc.

AUSTRIA

Table with columns: Stock, Jan 30, Price, +/-, etc. Includes Creditanstalt, Generali, etc.

BELGIUM/LUXEMBOURG

Table with columns: Stock, Jan 30, Price, +/-, etc. Includes ARBED, Bank Lux, etc.

ITALY

Table with columns: Stock, Jan 30, Price, +/-, etc. Includes Banca Com, BNL, etc.

SWITZERLAND

Table with columns: Stock, Jan 30, Price, +/-, etc. Includes Alusuisse, Bank Leu, etc.

INDICES

Table of stock indices with columns: Index Name, 1983-84, 1982-83, etc.

Table of stock indices with columns: Index Name, 1983-84, 1982-83, etc.

Follow the Leader

Do you want to reach the top international financial specialists in European industry? In mid 1982, the Financial Times, The Economist, and Euromoney commissioned Research Services Ltd. to conduct a study amongst these senior international financial specialists in order to discover what they read.

Table showing readership percentages for various publications: FINANCIAL TIMES (42%), FAZ (21%), etc.

Table showing readership percentages for various publications: FINANCIAL TIMES (42%), FAZ (21%), etc.

Subscription form: Name, Company, Position, Tel., etc.

FINANCIAL TIMES SUBSCRIPTION RATES. Please send me details of your subscription rates and how to receive the Financial Times regularly.

LONDON STOCK EXCHANGE

MARKET REPORT

Equity leaders become unsettled late but session featured by speculative activity

Account Dealing Dates

First Declared Last Account Dealing Date... 1984

A market expansion in speculative activity highlighted yesterday's first session of a new fortnightly trading Account...

Merchant banks were highlighted by a fresh flurry of speculative activity in Minister Assets...

Financial advertising agency Valin Pollen International staged a highly successful debut in the Unlisted Securities Market...

Blue chip industrialists which had recently attracted above-average support began to look down at the end of the session...

Phoenix down late A rising market of late on talk of a bid for Alliance...

better at 540p. In Lloyds Brokers, Hogge Robison, recently favoured on U.S. bid speculation...

Press suggestion that any further bid from Hanson Trust would be close to market price...

ing, part of which was aroused by fears of competition following Nippon Electric's plans to build a UK plant...

After Friday's speculative gain of 54, G.R.A. Group touched 254 before closing 239...

FINANCIAL TIMES STOCK INDICES

Table with columns for Jan 30, Jan 27, Jan 24, Jan 21, Jan 18, Jan 15, Jan 12, Jan 9, Jan 6, Jan 3, and year ago. Rows include Government Secs, Fixed Interest, Industrial Ord., Gold Mines, etc.

HIGHS AND LOWS S.E. ACTIVITY

Table with columns for High, Low, and S.E. Activity. Rows include Govt. Secs, Fixed Int., Ind. Ord., Gold Mines.

350p, while Abbey Panels put on 7 to 55p for a similar reason. Fleet Holdings continued firmly...

A good business developed in Imperial Group, up 2 to 159p, as buyers showed an increased interest ahead of the annual figures...

Oil's easier late Leading Oils took a breather following the excitement of the previous week...

Powell Duffryn jump Powell Duffryn raced up to 388p in active trading before settling at 340p...

sessions in precious and base-metal markets coupled with sterling's steady performance against the dollar. A shade firmer from the outset...

Business in London-based financials improved, although best price levels were not maintained. RTZ advanced in a 1983-1984 high of 675p before settling...

The restructuring details of certain UK plantation companies concerned UK Resources in respect of its plantation...

RECENT ISSUES

Table with columns for Issue, Amount, Date, and Stock. Rows include various financial instruments.

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Table with columns for Issue, Amount, Date, and Stock. Rows include various financial instruments.

FT-ACTUARIES SHARE INDICES

These indices are the joint compilation of the Financial Times, the Institute of Actuaries and the Faculty of Actuaries

Table with columns for Equity Groups & Sub-sections, Index No., Day's Change, etc. Rows include various equity groups.

FIXED INTEREST

Table with columns for Price Indices, Index No., Day's Change, etc. Rows include various fixed interest instruments.

EUROPEAN OPTIONS EXCHANGE

Table with columns for Series, Vol., Last, etc. Rows include various European options.

NEW HIGHS AND LOWS FOR 1983/84

Table with columns for New Highs and Lows for 1983/84. Rows include various stocks.

FRIDAY'S ACTIVE STOCKS

Table with columns for Stock, No. of Shares, etc. Rows include various active stocks.

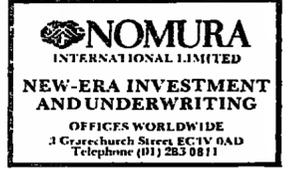
RISES AND FALLS YESTERDAY

Table with columns for Rise, Fall, etc. Rows include various stocks.

LONDON TRADED OPTIONS

Table with columns for Option, Calls, Puts, etc. Rows include various London traded options.

* Flat yield. Highs and lows record, base dates, values and conversion changes are published in Saturday issues. A list of constituents is available from the Publishers, The Financial Times, Bracken House, Cannon Street, London, EC4A 3DF, price 15p, by post 20p.



MINES—continued

Table of mine stocks including columns for High, Low, Stock, Price, and % Change. Includes sub-sections for Australians and Miscellaneous.

Table of Overseas Traders stocks including columns for High, Low, Stock, Price, and % Change.

NOTES: Unless otherwise indicated, prices and net dividends are in pence and fractional pence. 250.000 pence = £1,000.000.

Table of MINE Central Rand stocks including columns for High, Low, Stock, Price, and % Change.

Table of MINE Eastern Rand stocks including columns for High, Low, Stock, Price, and % Change.

Table of MINE Far West Rand stocks including columns for High, Low, Stock, Price, and % Change.

Table of MINE O.F.S. stocks including columns for High, Low, Stock, Price, and % Change.

Table of MINE Diamond and Platinum stocks including columns for High, Low, Stock, Price, and % Change.

Table of MINE Central African stocks including columns for High, Low, Stock, Price, and % Change.

INVESTMENT TRUSTS—Cont.

Table of investment trusts including columns for High, Low, Stock, Price, and % Change.

SHIPPING

Table of shipping stocks including columns for High, Low, Stock, Price, and % Change.

SHOES AND LEATHER

Table of shoes and leather stocks including columns for High, Low, Stock, Price, and % Change.

SOUTH AFRICANS

Table of South African stocks including columns for High, Low, Stock, Price, and % Change.

TEXTILES

Table of textile stocks including columns for High, Low, Stock, Price, and % Change.

TOBACCO

Table of tobacco stocks including columns for High, Low, Stock, Price, and % Change.

TRUSTS, FINANCE, LAND

Table of trusts, finance, and land stocks including columns for High, Low, Stock, Price, and % Change.

OIL AND GAS

Table of oil and gas stocks including columns for High, Low, Stock, Price, and % Change.

PROPERTY—Continued

Table of property stocks including columns for High, Low, Stock, Price, and % Change.

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PROPERTY—Continued

Table of property stocks including columns for High, Low, Stock, Price, and % Change.

LEISURE—Continued

Table of leisure stocks including columns for High, Low, Stock, Price, and % Change.

MOTORS, AIRCRAFT TRADES

Motors and Cycles

Table of motor and cycle stocks including columns for High, Low, Stock, Price, and % Change.

Commercial Vehicles

Table of commercial vehicle stocks including columns for High, Low, Stock, Price, and % Change.

Components

Table of component stocks including columns for High, Low, Stock, Price, and % Change.

Garages and Distributors

Table of garage and distributor stocks including columns for High, Low, Stock, Price, and % Change.

WOODS AND DISTRICTS

Table of wood and district stocks including columns for High, Low, Stock, Price, and % Change.

NEWSPAPERS, PUBLISHERS

Table of newspaper and publisher stocks including columns for High, Low, Stock, Price, and % Change.

PAPER, PRINTING

Table of paper and printing stocks including columns for High, Low, Stock, Price, and % Change.

PROPERTY

Table of property stocks including columns for High, Low, Stock, Price, and % Change.

PROPERTY

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PROPERTY

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PROPERTY

Table of property stocks including columns for High, Low, Stock, Price, and % Change.

INDUSTRIALS—Continued

Table of industrial stocks including columns for High, Low, Stock, Price, and % Change.

INDUSTRIALS—Continued

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INDUSTRIALS—Continued

Table of industrial stocks including columns for High, Low, Stock, Price, and % Change.

INSURANCE

Table of insurance stocks including columns for High, Low, Stock, Price, and % Change.

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CURRENCIES, MONEY and CAPITAL MARKETS

FOREIGN EXCHANGES

Dollar weak in thin trade

The dollar lost ground on the foreign exchanges yesterday, touching its lowest level since the opening of the New York market, but finishing in London above its worst levels. A fall of \$2.70 in U.S. M1 money supply announced last Friday was the main factor behind the dollar's decline, but at the same time the downward drift was limited by the better than expected December trade figures, also published Friday, and the decision of President Reagan to seek another term of office.

Trading was very thin however, particularly before U.S. traders entered the market, but the dollar's trend this week may be influenced by today's figures on U.S. leading indicators, which are expected to show only a small rise in the region of 0.8 per cent. Other significant events are the present meeting of the Federal Open Market Committee to set monetary policy for the month, tomorrow's announcement of the U.S. Treasury refunding package for February, and Friday's U.S. unemployment figures.

In very quiet trade the dollar fell to DM 2.3110 from DM 2.3200 against the D-Mark, FFR 12.0250 from FFR 12.0350 against the French franc, and SwFr 2.3410 from SwFr 2.3475 in terms of the Swiss franc, but rose slightly

to Y234.55 from Y234.25 against the Japanese yen.

STERLING — Trading range against the dollar in 1983-84 is 1.2545 to 1.2562. December average 1.4344. Trade-weighted index 81.9 throughout the day, unchanged from Friday's close, compared with 83.4 six months ago.

The pound was up on the sidelines, moving within a narrow range, and is unlikely to be influenced by either of the major statistics due for publication this week. These are UK official reserves and unemployment figures. Sterling opened at \$1.4055-1.4065, and after moving between \$1.4045 and \$1.4095, closed at \$1.4075-1.4085, a rise of 45 points on the day. The pound eased slightly to DM 2.3110 from DM 2.3200.

EMS EUROPEAN CURRENCY UNIT RATES

Country	Jan 30	Jan 31	% change	Jan 30	Jan 31	% change
Belgium Franc	44.9008	46.0891	+2.66	1.36	1.36	—
Dutch Guilder	2.14704	2.18047	+1.56	1.36	1.36	—
French Franc	6.55958	6.55958	0.00	1.36	1.36	—
Italian Lire	1403.49	1375.25	-2.01	1.36	1.36	—

Changes are for ECU, therefore positive change denotes a weak currency. Adjustments calculated by Financial Times.

the French franc at DM 32.69 per FFR 100.

D-MARK — Trading range against the dollar in 1983-84 is 1.2545 to 1.2562. December average 2.7457. Trade-weighted index 123.4 against 125.7 six months ago.

The dollar was fixed at DM 2.3110 at yesterday's fixing in Frankfurt, unchanged from Friday. The Bundesbank sold \$20.35m at the time. Trading was confined to a narrow range with the dollar's recent firmer trend countered by a larger than expected fall in U.S. money supply. Sterling was slightly firmer at DM 2.3110 from DM 2.3200 but the Swiss franc eased to DM 1.2545 from DM 1.2562.

The pound was up on the sidelines, moving within a narrow range, and is unlikely to be influenced by either of the major statistics due for publication this week. These are UK official reserves and unemployment figures. Sterling opened at \$1.4055-1.4065, and after moving between \$1.4045 and \$1.4095, closed at \$1.4075-1.4085, a rise of 45 points on the day. The pound eased slightly to DM 2.3110 from DM 2.3200.

FINANCIAL FUTURES

Eurodollars firm

Euro-dollar prices improved in the London International Financial Futures Exchange yesterday. Sentiment was influenced by a steady Federal funds rate and better-than-expected U.S. money supply figures announced on Friday.

President Reagan's decision to stand for re-election was also an influence. These factors together proved to be mildly bullish and after an early unsuccessful attempt to push values lower as U.S. markets opened, prices finished close to the day's highs.

The market continues to focus its attention on U.S. statistics in order to try and assess the possible effect on interest rates. U.S. leading economic indicators are due for release today. A small increase is expected and this would tend to reinforce market views that the U.S. economy is not as weak as some

recent statistics may have suggested. The March Euro-dollar price opened at 90.27 up from 89.23 and touched a best level of 90.32 before finishing on 90.30.

Gold prices improved in early trading, helped by sterling's steadier performance and a stronger cash market. There was little movement during the afternoon apart from a brief attempt to push values lower. The March price opened at 108.15 up from Friday's close of 108.10 and touched a best level of 109.08 before finishing on 109.06.

Short sterling was also firmer. The March price opened at 90.64 and rose to 90.85, after touching a high of 90.70, and compared with Friday's settlement price of 90.53. The instant March contract attracted 15 transactions in its new firm form.

LONDON

Three-month Eurodollar	Close	High	Low	Prev
March	90.27	90.32	89.23	90.23
June	89.82	89.82	88.88	89.82
Sept	89.61	89.63	88.61	89.61
Dec	89.32	89.32	88.32	89.32

CHICAGO

U.S. Treasury Bonds	Close	High	Low	Prev
March	91.08	91.12	90.08	91.08
June	90.70	90.70	89.70	90.70
Sept	90.43	90.43	89.43	90.43
Dec	90.11	90.11	89.11	90.11

STERLING

Three-month Sterling	Close	High	Low	Prev
March	90.89	90.70	90.64	90.64
June	90.43	90.43	89.43	90.43
Sept	90.24	90.24	89.24	90.24
Dec	90.11	90.11	89.11	90.11

EURODOLLAR DEPOSIT

Three-month Eurodollar	Close	High	Low	Prev
March	90.89	90.70	90.64	90.64
June	90.43	90.43	89.43	90.43
Sept	90.24	90.24	89.24	90.24
Dec	90.11	90.11	89.11	90.11

20-YEAR 12% NOTIONAL GILT

Close	High	Low	Prev
108.06	108.06	107.10	108.10
107.10	107.10	107.28	107.10
107.28	107.28	107.43	107.28
107.43	107.43	107.58	107.43

DEUTSCHE MARKS

Close	High	Low	Prev
3.3671	3.3759	3.3565	3.3563
3.3563	3.3651	3.3449	3.3449
3.3449	3.3537	3.3335	3.3335
3.3335	3.3423	3.3221	3.3221

SWISS FRANC

Close	High	Low	Prev
2.3410	2.3498	2.3298	2.3298
2.3298	2.3386	2.3186	2.3186
2.3186	2.3274	2.3074	2.3074
2.3074	2.3162	2.2962	2.2962

JAPANESE YEN

Close	High	Low	Prev
242.80	243.83	241.80	242.80
241.80	242.83	240.80	241.80
240.80	241.83	239.80	240.80
239.80	240.83	238.80	239.80

THE POUND SPOT AND FORWARD

Jan 30	Day's spread	Close	One month	% Three months
U.S.	1.4045-1.4095	1.4075-1.4085	0.03-0.06c dis	-0.47
Canada	1.2021-1.2050	1.2030-1.2040	0.02-0.05c dis	-0.52
Netherlands	4.46-4.47	4.46-4.46	0.00	—
Belgium	36.20-37.20	36.20-37.20	0.00	—
Denmark	14.31-14.34	14.31-14.34	0.00	—
France	1.2545-1.2562	1.2545-1.2562	0.00	—
Germany	2.3110-2.3200	2.3110-2.3200	0.00	—
Italy	1.36-1.37	1.36-1.37	0.00	—
Japan	223.25-223.75	223.25-223.75	0.00	—
Spain	166.00-166.50	166.00-166.50	0.00	—
Sweden	2.3110-2.3200	2.3110-2.3200	0.00	—
Switzerland	2.3110-2.3200	2.3110-2.3200	0.00	—
Other	1.4045-1.4095	1.4075-1.4085	0.03-0.06c dis	-0.47

Belgium rate is for convertible francs. Financial franc 82.35-82.45. Six-month forward dollar 0.25-0.30c dis, 12-month 0.65-0.75c dis.

THE DOLLAR SPOT AND FORWARD

Jan 30	Day's spread	Close	One month	% Three months
U.S.	1.4045-1.4095	1.4075-1.4085	0.03-0.06c dis	-0.47
Canada	1.2021-1.2050	1.2030-1.2040	0.02-0.05c dis	-0.52
Netherlands	4.46-4.47	4.46-4.46	0.00	—
Belgium	36.20-37.20	36.20-37.20	0.00	—
Denmark	14.31-14.34	14.31-14.34	0.00	—
France	1.2545-1.2562	1.2545-1.2562	0.00	—
Germany	2.3110-2.3200	2.3110-2.3200	0.00	—
Italy	1.36-1.37	1.36-1.37	0.00	—
Japan	223.25-223.75	223.25-223.75	0.00	—
Spain	166.00-166.50	166.00-166.50	0.00	—
Sweden	2.3110-2.3200	2.3110-2.3200	0.00	—
Switzerland	2.3110-2.3200	2.3110-2.3200	0.00	—
Other	1.4045-1.4095	1.4075-1.4085	0.03-0.06c dis	-0.47

UK and Ireland are quoted in U.S. dollars. Forward premiums and discounts apply to the U.S. dollar and not to the individual currency. Belgop rate is for convertible francs. Financial franc 82.35-82.45.

OTHER CURRENCIES

Jan. 30	£	Jan. 31	Note rates
Argentina Peso	36.51-36.68	36.09-36.25	Australia 97.75-98.05
Australia Dollar	1.5350-1.5360	1.5350-1.5360	Belgium 46.08-46.18
East German Mark	1.0000-1.0000	1.0000-1.0000	Canada 1.2030-1.2040
Finland Mark	5.5435-5.5455	5.5400-5.5420	France 6.5595-6.5615
West German Mark	1.4315-1.4325	1.4315-1.4325	Germany 2.3110-2.3120
Hong Kong Dollar	7.8000-7.8010	7.8000-7.8010	Italy 1.3600-1.3610
Iran Rial	134.90	68.60	Japan 223.25-223.75
Kuwait Dinar	4.0000-4.0010	4.0000-4.0010	Netherlands 4.4600-4.4610
Luxembourg Franc	60.80-60.90	61.42-61.44	Norway 11.02-11.12
Malaysia Dollar	2.3960-2.3970	2.3960-2.3970	Portugal 202.00-202.10
New Zealand Dollar	1.7515-1.7525	1.7515-1.7525	Spain 166.00-166.10
Saudi Arabia Riyal	4.3365-4.3410	4.3365-4.3410	Sweden 2.3110-2.3120
Singapore Dollar	2.0080-2.0090	2.0080-2.0090	Switzerland 2.3110-2.3120
South African Rand	1.7615-1.7625	1.7615-1.7625	United States 1.0000-1.0000
U.A.E. Dirham	5.1615-5.1710	5.1720-5.1730	Yugoslavia 1.3810-1.3820

*Selling rates.

CURRENCY MOVEMENTS

Jan. 27	Bank of England	Morgan Guaranty	Jan. 30	Special Drawing Rights	Jan. 30	Currency Unit
Starting	81.8	-5	81.8	0.75806	0.570140	—
U.S. dollar	81.8	-5	81.8	1.01459	1.01459	—
Canadian dollar	81.8	-5	81.8	20.5258	20.5258	—
Australian dollar	81.8	-5	81.8	10.59405	10.59405	—
Belgian franc	81.8	-5	81.8	35.9360	35.9360	—
Dutch guilder	81.8	-5	81.8	5.37909	5.37909	—
French franc	81.8	-5	81.8	6.55958	6.55958	—
German mark	81.8	-5	81.8	1.65410	1.65410	—
Italian lire	81.8	-5	81.8	242.482	242.482	—
Japanese yen	81.8	-5	81.8	239.775	239.775	—
Spanish peseta	81.8	-5	81.8	1.65410	1.65410	—
Swedish krona	81.8	-5	81.8	2.31100	2.31100	—
Swiss franc	81.8	-5	81.8	2.31100	2.31100	—
Yugoslav dinar	81.8	-5	81.8	1.38100	1.38100	—

Morgan Guaranty closing average 1980-1982 = 105. Bank of England index (base average 1975=100).

EXCHANGE CROSS RATES

Jan. 30	£	Jan. 31	£
Pound Sterling	1.0000	1.0000	1.0000
U.S. Dollar	0.7070	0.7070	0.7070
Deutsche Mark	2.3110	2.3110	2.3110
Japanese Yen	223.25	223.25	223.25
French Franc	6.5595	6.5595	6.5595
Swiss Franc	2.3110	2.3110	2.3110
Dutch Guilder	3.7603	3.7603	3.7603
Italian Lire	2.0364	2.0364	2.0364
Canadian Dollar	1.2030	1.2030	1.2030
Australian Dollar	1.5350	1.5350	1.5350

CURRENCY RATES

Jan. 30	Bank of England	Morgan Guaranty	Jan. 30	Special Drawing Rights	Jan. 30	Currency Unit
Starting	81.8	-5	81.8	0.75806	0.570140	—
U.S. dollar	81.8	-5	81.8	1.01459	1.01459	—
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Australian dollar	81.8	-5	81.8	10.59405	10.59405	—
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Dutch guilder	81.8	-5	81.8	5.37909	5.37909	—
French franc	81.8	-5	81.8	6.55958	6.55958	—
German mark	81.8	-5	81.8	1.65410	1.65410	—
Italian lire	81.8	-5	81.8	242.482	242.482	—
Japanese yen	81.8	-5	81.8	239.775	239.775	—
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Swiss franc	81.8	-5	81.8	2.31100	2.31100	—
Yugoslav dinar	81.8	-5	81.8	1.38100	1.38100	—

EURO-CURRENCY INTEREST RATES (Market closing rates)

Jan. 30	Sterling	U.S. Dollar	Canadian Dollar	Dutch Guilder	Swiss Franc	French Franc	German Mark	Italian Lire	Belgian Franc</
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INTERNATIONAL CAPITAL MARKETS

GOVERNMENT GUARANTEED BONDS TO RAISE Y603BN

Japan to lift foreign borrowing

BY YOKO SHIBATA IN TOKYO

JAPAN has decided to sharply increase the amount of overseas borrowing in the form of government guaranteed bonds by state departments, companies and agencies.

For fiscal 1985, starting from April 1, the Finance Ministry is planning to raise Y603bn (\$2.6bn) worth of such bonds, almost 50 per cent up on this year's Y400bn.

Overseas borrowing in the private capital market by governmental bodies has had to increase to make up for the slackening of the growth in funds from domestic sources. For fiscal 1983 the country's investment and loan programme is seen as totalling Y21,000bn - a rise of only 1.9 per cent over the current year's level.

With the Swiss franc market nearing saturation point from Japa-

nese government and corporate issues, the ministry is known to be directing borrowers towards both the Eurodollar and the New York market.

The ministry and the Japan Development Bank are currently preparing to issue US\$100m worth of government guaranteed bonds in New York before the end of March to help the flow of dollar funds into Japan so as to boost the yen against the US currency.

In yet another capital markets liberalisation measure the ministry is to ease from April the rules governing the issuing of "Samurai bonds" - yen-denominated bonds issued by foreign governments and agencies on the Japanese capital markets.

Under the formula worked out by

Japanese underwriting securities companies, criteria for issuers new to the market are to be eased to allow issues by foreign governments and agencies rated AA, instead of AAA by the private Japanese Bond Research Institute.

Also, the same borrower will be able to float a Samurai bond without waiting for six months or more. The maximum amount of a Samurai bond for the World Bank, Asian Development Bank and Inter-American Development Bank is to be lifted by Y10bn to Y30bn. The maximum amount for other AAA borrowers is to be set at Y20bn.

The new rules were originally planned to come into effect last autumn but were shelved owing to the persistent weakness of the yen against the U.S. dollar. This put

borrowers off the Samurai market for fear of foreign exchange losses at the time of redemption.

The ministry has also been concerned that relaxation of the rules would prompt an outflow of funds from Japan - meaning a further weakening of the yen. In view of the severe criticism of the closed nature of the Japanese capital market, the ministry and the underwriting securities companies have now decided to relax the Samurai bond flotation rules.

In 1983 there were 41 Samurai bond issues worth Y720bn, up by 8.6 per cent from the Y663bn in 1982 for 32 issues. Following this relaxing of the rules, the number and value of Samurai bond issues in 1984 are expected to increase considerably.

Turkish Euroloan progresses

By Peter Montagnon, Euromarkets Correspondent

MANUFACTURERS Hanover is to co-ordinate the loan of at least \$300m being sought by Turkey to help cover its external financing needs for this year.

Terms of the loan, which is to be assembled on a club basis, include a margin of 1 1/2 points over London Eurodollar rates or 1/4 points over the U.S. prime. The loan will mature in six years, although repayments are due to start after a grace period of 3 1/2 years.

These margins are the same as those won by Turkey on a \$200m loan arranged last year, although that loan had a shorter life of only five years. This time round, Turkey has been particularly keen to stretch out the maturity on its new loan, partly because it faces large repayments next year of short term convertible lira deposits rescheduled in the late 1970s.

Initial response to the new loan has been positive. Turkey is now benefiting from its rarity value in the Eurocredit market, which has offered only limited lending opportunities this year. The country's credit rating is now seen as well on the way to full rehabilitation.

Austrian terms confirm drop in margins

By Our Euromarkets Correspondent

FURTHER EVIDENCE of downward pressure on margins for top quality borrowers in the Eurocredit market has come with a \$100m, eight-year credit for Austria.

Led by Citicorp, Midland and Dai-ichi Kangyo, the loan bears a margin of only 1/2 per cent over London Eurodollar rates. Repayments are due to begin after a grace period of six years.

The loan, which was due to be signed yesterday, had been placed with a very small club of providing banks along the usual discreet lines normally employed by the Austrian authorities.

It is understood that the terms for the deal were arranged several months ago, but it was not completed until now so that it would count as part of the country's 1984 borrowing requirement rather than adding to last year's total.

SwFr foreign borrowing hits record

FOREIGN Swiss franc borrowings reached a record level last year, according to the Swiss National Bank, rising some 5.8 per cent to SwFr 40.2bn (\$16.2bn).

This was largely because of a 17 per cent jump, to SwFr 20.7bn, in the volume of private placements by foreigners, particularly as a result of a large number of medium-term note issues by Japanese borrowers, which accounted for more than half of the entire private placement market.

The volume of public bond issues by foreign borrowers rose 3 per cent to SwFr 10.0bn. Within this total, the share of two-currency issues rose to 12 per cent, compared with only 4 per cent in 1982.

FT INTERNATIONAL BOND SERVICE

The list shows the 200 latest international bond issues for which an adequate secondary market exists. The following are closing prices for January 30.

Table with columns: Country, Issue Name, Maturity, Yield, Bid, Offer, Change on day, and YTD. Includes sections for U.S. Dollar, Swiss Franc, and Yen.

Active primary market nears \$300m

BY MARY ANN SIEGHART IN LONDON

DESPITE a conspicuous lack of retail interest in the Eurodollar bond secondary market, new issue activity yesterday was strong with nearly \$300m of bonds being launched.

Industrial Bank of Japan launched a \$125m, five-year bond which carries an 11 1/2 per cent coupon at par. IBI International is leading the deal with S.G. Warburg, Morgan Guaranty and Morgan Stanley. Like all recent Japanese bank fixed-rate bonds, the proceeds of the issue will be swapped for floating rate funds. IBI is understood to be receiving this money at a rate substantially under the London interbank offered rate (Libor).

Despite its relatively low coupon, the issue traded within its selling concession, reflecting investors' preference for five-year paper.

Commerzbank's \$100m floating rate note, launched over the weekend, continued to hold up well, just inside its front-end fees of 0.45 per cent.

The five-year issue pays a coupon set at three-month Libor at par and

is led by Commerzbank with Credit Suisse First Boston and Orion Royal Bank. Each \$100,000 bond carries 10 warrants, priced at \$12.50 each, to buy into a five-year, 11 1/2 per cent coupon at par. The warrants have a 3 1/2-year life and were trading yesterday around their offer price.

Mitsubishi Metal Corporation, meanwhile, is raising \$40m through a five-year bond with an indicated 6 per cent coupon at par. With each \$5000 bond is included one warrant to buy \$5,000 worth of the company's equity at a premium of about 2 1/2 per cent over the share price.

Nikko Securities, the lead manager, will price the deal on February 8. Mitsubishi Finance and Morgan Grenfell are co-leaders, the former making its debut as a co-lead manager of a public issue.

The bond was very warmly received, trading at a small premium to its par price.

Salomon Brothers announced a novel deal yesterday, based on a technique already widely used in the U.S. domestic market. It is issu-

BHF Bank bond average

Table with columns: Jan 30, High, Low, Previous, and Low. Shows bond price movements.

but the addition of the coupon payments brings the total to \$487.5m.

Hill Samuel, the UK merchant bank, yesterday launched a \$30m FRN which pays 1/4 per cent over the mean of the six-month London interbank bid and offered rates at par.

The 12-year bond is led by Morgan Guaranty and Hill Samuel and traded at a small 0.15 per cent discount from par, well within its 0.60 per cent front-end fees. Today should see the launch of a \$250m Boeier from Credit Commercial de France, the French bank. It plans to lead the deal itself and the terms are expected to include a 12-year life and a spread of 1/4 point over the mean of the 6-month bid and offered rates.

In Germany, Pepsico, always a popular name, launched a very successful, though large, DM 250m deal through Dresdner Bank. The bond has a 10-year life and a 7 1/4 per cent coupon at par. It traded at a 1/4 point discount, well within its 1 1/2 point selling concession.

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31st January, 1984.

Advertisement for Baxter Technologies Corporation, featuring a \$10,000,000 (Cdn.) 4,000,000 Units offering.

Advertisement for City Investing Company, offering US \$50,000,000 in Guaranteed Floating Rate Notes due 1986.

Advertisement for Barclays International, offering U.S. \$200,000,000 in Guaranteed Floating Rate Notes convertible until January 1988.

Advertisement for Tribune Company Overseas Finance N.V., offering 14% Guaranteed Notes Due March 1, 1986.

Advertisement for A/S Eksportfinans, offering U.S. \$50,000,000 11 1/2% Notes Due 1987.

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OND SERVICE

SECTION IV FINANCIAL TIMES SURVEY

Tuesday January 31, 1984

DRAX Power Station

Phase two, costing £1bn, is being built within budget. With phase one, it will provide the biggest coal-fired station in Europe by 1986. The CEGB's tough management has brought results which are widely admired

By NICK GARNETT

THE FIRST generating unit in the £1bn second phase of the Drax Power Station construction project was recently synchronised with the national power grid—a significant demonstration by the Central Electricity Generating Board, the construction industry and its unions that they could build to time, and within budget.

If the third and final unit is completed on schedule in two years' time, they will have secured a build performance for a power station which could not be attained 10 years ago.

The 2,000 Megawatts of the second phase of Drax, whose construction began in 1978, will complement the similar generating capacity of the first phase of Drax, completed 10 years ago, providing the generating board with the biggest coal-fired station in Western Europe.

The second phase of Drax has been built so far to time and cost as a result of a construction programme free of the stoppages, delays and cost overruns which characterised much of power station building and other large project construction in the 1970s.

The basis of this has been a much tougher attitude towards control of the project by the CEGB as client-owner. It has insisted in negotiations on a return to lump sum in place of cost reimbursable contracts, on the introduction of a structure for harmonising pay and

conditions, and on double day shift working. On top of this the 1981 national agreement for the mechanical engineering sector has created a new framework within which major developments can take place.

Some engineers say the build performance has been as good as that achieved anywhere in Europe, but it remains to be seen whether this represents a decisive and permanent leap forward in the industry's ability to undertake major projects or, possibly, only the temporary influence exerted by recession on trade union power.

Complicated

It also raises the question whether the factors which have contributed to the performance at Drax can be translated to the construction of the Sizewell B nuclear pressurised water reactor station, the public inquiry into which is now in its second year.

Project management for that power station, if it is given the go-ahead could be a more complicated and controversial issue, and has yet to be agreed by the Government. The generating board and the National Nuclear Corporation, however, have come to an agreement on broad aspects of project management. The board says many of the features and lessons learnt at Drax and at the Heysham Two nuclear station—where many of the Drax-style control tools

also in use—could be a management model for Sizewell.

The second phase of Drax began in controversy. Drax A was started in 1966 and completed just as the first oil shock of the early 1970s was causing major downward revision of energy demand. This resulted in a generating board decision not to contemplate building a new station until the end of the decade.

The Labour Government of Mr James Callaghan was under pressure, however, to throw a lifeline to the UK's hard-pressed plant manufacturing industry, particularly in the north-east and Scotland. Eventually, the generating board was persuaded by the then Energy Secretary, Mr Tony Benn, to go ahead with the second phase of Drax, at least 18 months early, in return for which the Government paid the board £50m compensation for additional interest charges incurred in bringing the project forward.

In terms of energy demand the second phase of Drax is still not needed. The CEGB's total generating capacity is 54.8 Gigawatts (54,800 Megawatts) as against the maximum simultaneous demand last year of 42 Gigawatts. Much of the board's very expensive to run oil-fired capacity is used solely for topping up the system.

The board says, though, that Drax, which alone will be able to meet almost 10 per cent of national demand, when completed, is an important element



ONE OF THE HUGE COOLING TOWERS NEARS COMPLETION

in its ability to shut down much less cost effective capacity.

The thermal efficiency of both parts of Drax together will be about 37.5 per cent which compares with a level of only 29 per cent achieved by some of the worst stations. The last three of Drax's six generating units will save around £55m a year in generating costs when compared with the least efficient stations, according to the CEGB.

Prime centre

When completed, the Drax twins will consume 10m tonnes of coal a year, which, at cur-

rent costs, is worth £410m to the National Coal Board. The second phase is also utilising a construction workforce of 3,000, two-thirds of whom live permanently in the Yorkshire Humberside area. Britain's prime centre of power generation accounting for one-fifth of electricity output. The whole of Drax, which has a common control room (though the two plants can be run separately) will employ 1,100 to operate it. And, as with all such projects, Drax final phase is a shop window for British contractors.

This is now even more the case because the generating

board, the unions and the contractors can point to it as a powerful achievement so far in cooperation and productivity.

Between the project start in 1978 and November last year, just 1.34 per cent of man hours were lost as a result of disputes, many of them from the TUC day of action.

It has also taken just 54 months to complete the first of the three 660 Mw units in Drax phase two. Drax A, whose problems included a nine-month strike, took 80 months to cover the same ground and the build performance for some other



Editorial production: Michael Strutt

Pictures by Hugh Routledge

stations has been 70 to 80 months. The final phase of Drax has returned build performance to that being achieved in the 1960s.

The delays and cost overruns which plagued much of power station and other big project construction during the 1970s were due to a lack of management control and a whole series of union-management and inter-union rows. These achieved their most public notoriety during the Isle of Grain loggers' dispute but similar friction has been virtually absent during Drax.

Source

It has, nevertheless, suffered problems. It endured an eight-week strike during foundation works. A change in the source of coal, bringing in supplies with a much greater ash content than was planned for, resulted in late design alterations to hoppers. These and other difficulties caused the project to fall 26 weeks behind schedule at one point but that was clawed back.

Project management has also been assisted by the generating board's decision to duplicate Drax A as far as possible. This could not be fully achieved, partly because of plant measurement changes resulting from metrication and alterations in plant design since Drax A was built.

Project management control tools and labour relations are

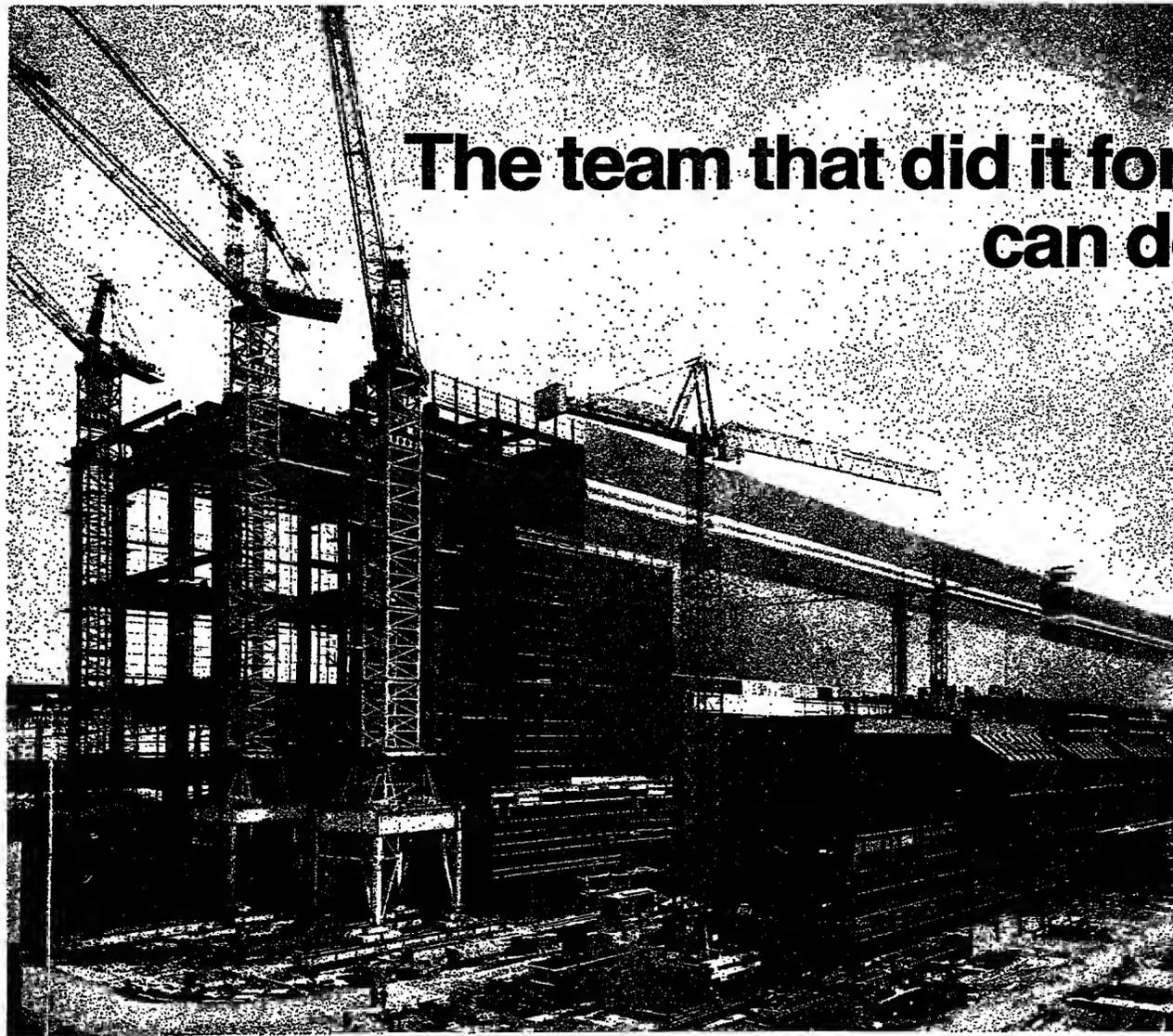
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the two most important features of Drax construction. The structure devised within the CEGB followed the findings of a business Round Table study into the U.S. construction industry which has also suffered severe problems.

The structure is encapsulated in a report by Mr Denis Lomer, former executive board member of the CEGB, and entitled, "Will Drax give back to the construction industry its credibility on large projects?"

Mr John Baldwin, general secretary of the construction section of the Amalgamated Union of Engineering Workers, and a main backer of the 1981 national agreement for mechanical engineering, has no doubts. "We've drastically changed the industry around." Others in the trade union movement are more doubtful. Mr George Henderson, national construction secretary of the Transport and General Workers Union, believes that many of the positive changes in the industry will not be permanent.

For the generating board's construction division, Mr John Collier, its director-general, argues that the performance at Drax and Heysham Two will stand the board and the construction industry in good stead when the recession ends. He hopes orderly labour relations will be maintained.



The team that did it for Drax can do it for you

At 17.20 hrs on December 3rd 1983 the first of three 660 megawatt generating units at the Drax Power Station Completion project in North Yorkshire supplied power for the first time to the National Grid.

Today, January 31st 1984—fifty-six months into an eighty month construction programme—the project is on time and within its planned cost.

By the time it is completed in 1986 it will have cost more than £1000 million and together with the first half of the station, completed in 1975, Drax will be capable of supplying a quarter of the electrical needs of the whole of the North East of England.

It will burn 35,000 tonnes of coal every day providing jobs for more than 20,000 miners for the length of its operational life.

Pulling together a job like this calls for a lot of experience. That experience is available on a consultancy basis.

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The custom-built complex at Barnwood houses one of the most experienced power station design and construction teams in Western Europe with access to the vast research and operations experience of the CEGB.

Specialisations include:
Site investigation, project evaluation,
planning, project management, budget control, civil engineering, mechanical, electrical and nuclear engineering, control and instrumentation.

DRAX II

Construction has proceeded smoothly thanks to close monitoring by the CEGB Builders meet time and cost targets

UNDERPINNING THE construction of the second phase of Drax is a return to traditional lump sum supply and erection contracts—also used in Drax Phase I—in place of the cost-reimbursable contract which became prevalent in the 1970s and which contributed to the disastrous construction performance of the Isle of Grain and Ince power stations.

Reimbursable contracts, recommended in the Wilson Committee and Large Sites reports of 1969-70, effectively heap all the risk on the owner-client, and remove incentives from contractors and the workforce to keep the project to programme.

The paper written by Mr Denis Lomer, former CEGB board member, setting out the structure on which construction organisation has been arranged, makes it clear that problems of cost-reimbursable contracts are severely aggravated when the client is reluctant to exercise a strong role with contractors and through their workforces.

This is particularly so during periods of high inflation, rocketing wage demands and growing shop steward power.

None of the 11 main supply and erect contracts and 30 other principal contracts for the second phase of Drax was cost-reimbursable. They were all lump sum contracts with price adjustment mechanisms or fixed price for short contracts.

Within this framework, Design Phase Contracts have been used. One of the biggest drags on construction performance is plant design changes during manufacture and erection. Design phase contracts which run for 18 months and are largely used on boiler and turbine work, require contractors to do virtually all design work before manufacture.

They must also provide a range of information during the design phase which is needed by the board and other contractors to undertake design of buildings and other equipment. Such information includes size, weight and shape of equipment, dynamic forces on the foundations and the permanent water and electricity requirements to drive plant.

THE MOST pronounced achievement in the construction of the second phase of Drax is that so far it has been built to time and cost. A whole series of factors have contributed, based on the CEGB's working relationships with contractors and the organisational system used to control them and tight local and national working agree-

ments with the unions. These have been geared to producing optimum performance from companies involved in the Drax construction, stable industrial relations and efficient patterns of working. Underlying all this has been the difficult economic climate and the background pressure of massive unemployment among con-

struction workers which has weakened union power and dampened militancy. Many of these features are interlinked, but it is possible to isolate those factors which apply directly to the generating board's dealings with contractors and between contractors themselves and those which relate to the role of unions and the workforce.

contractors' activities at works and site which we had never enjoyed before," says Mr Elston.

The usual method of penalising construction delays is the application of damages for delayed completion. The problem with this is that it is restricted to the end of a contract. The Generating Board therefore examined ways of making "penalties," or the threat of them, effective during all stages of a contract including plant manufacturing.

As a result, a key date procedure has been applied on major plant contracts. At regular intervals, usually every six months or so, the generating board and each contractor review how much work that contractor has achieved as against its target.

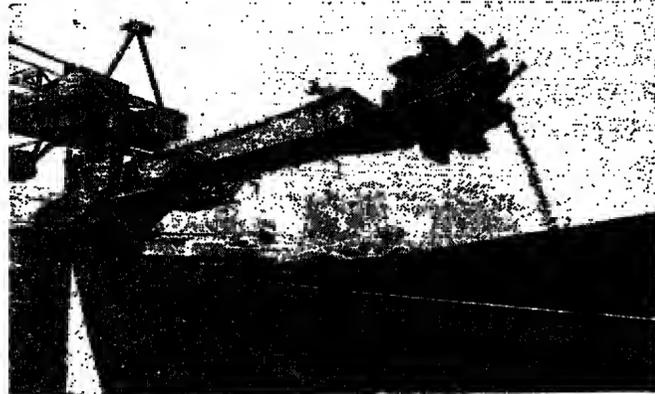
Stage payment

The contractor gets paid only for the work it has done but the Generating Board has also the right to withhold a stage payment—that is the monthly payment due at that time—until the contractor gets back on programme if it has slipped behind. The contractor gets paid in the cash flow is hit.

Because senior contractor management becomes aware of unsatisfactory progress through cash flow problems caused by the withholding of payments, remedial measures can be taken by contractors when they are most effective.

Work on build programmes is very detailed. A good example is boiler construction and installation. This, as with most other build programmes is reflected in an "S" curve progression rate, with boiler construction divided into packages of work which are divided into further sub-packages. The work programme is agreed between contractor and the CEGB and fed into a computer. This is then used to calculate—to three decimal places—the actual rate of completion.

Nick Garnett



This mammoth coal-handling machine is in keeping with the size of the project

In this respect, of course, the second phase of Drax has been greatly assisted by following on from the first phase which uses very similar design and equipment. Before all this, however, the Generating Board carried out what is called a vendor assessment much deeper than it has done for previous construction projects. This involves the visits of Generating Board employees to potential contractors to carry out a capability audit before they are included on tender lists. The assessment looks at such factors as a company's finances, managerial competence, quality and design record and manufacturing capacity.

Mr Jack Elston, the Drax manager, says the assessment also includes labour relations of prospective tenderers, their strike record and when their next wage agreement is due. After the design phase contracts were completed, the generation development and construction division produced a status report. This was reviewed with full-time members of the CEGB board to assess risks to programme and budget.

Apart from monthly reviews by division directors, and further reports every three months, a very detailed status report is prepared every year and discussed with the CEGB executive. These reports, drawn up by Mr Elston, cover such issues as failures and successes, the placing of contracts and the future programme. Any identified risks to the programme are linked to action proposed or being undertaken to minimise that risk.

A crucial element has been key date procedures which were not used during Phase I of Drax. "The introduction of the key date procedure gave us a degree of control over the

The workforce has proved highly co-operative High productivity score

THE SECOND phase of Drax has demonstrated remarkably good labour relations and shift patterns which have broken new ground for power station construction. The civil engineering programme suffered a two-month strike in 1979, sparked by the shop steward credentials of one man, but overall the hours lost through labour disputes have been very small. Last year, for example, they totalled less than 1 per cent of hours worked.

The CEGB's construction division has begun to detect faint signs of the labour rumbles which frequently occur towards the end of a building programme but says it is determined to keep the lid on them.

Three principal factors have contributed to this unusually high productivity record. These are double day-shift working among the mechanical and electrical trades; the use of what are termed the Management Group, the Study Group and the much more familiar Project Joint Council (PJC); and the 1981 national agreement for the engineering construction industry.

Underlying all this however has been the willingness of unions and their representatives, the contractors and the CEGB to spend a great deal of time on the labour relations groundwork for the entire Drax project. "At every level people are relating to each other," says Mr George Henderson, Transport and General Workers' Union national secretary for construction. "The

general feeling is that they are all part of a team."

The generating board initially did not envisage the use of double day-shifts for the mechanical and the electrical trades in the run-up to phase two of Drax, but quickly came to the conclusion that they could and should be introduced. This was never attempted with the civil engineering trades partly because the benefits would be less with such a group though it is doubtful whether agreement could have been reached in any case.

The problem with normal Monday to Friday and then Sunday working with overtime is that it is expensive on overtime payments, that overtime is too tiring for individuals who have already put in a 38-hour week or eight-hour day and that high absenteeism is a feature of Sunday working. Double day-shifts means faster construction.

Twin lure

It took six months of negotiations with the mechanical trades, the twin lure being more jobs than under the normal overtime system and a shift premium. It adds about 500 extra workers to the labour force but total manhours worked are about the same as under the traditional system using overtime.

The mechanical trade shifts are 6 am to 2.30 pm five days a week and 3 pm to midnight, four nights a week, with people changing shifts every two weeks. The shift premium is 20 per cent of the basic rate for morning shifts and 30 per cent for the evening shift.

Of the mechanical sector, 87 per cent of the workforce work shifts and 64 per cent of the electrical trades. A very small percentage of the civil engineering work is done in shifts, giving a total of 68 per cent of all employees on site doing shift work.

One of the most crucial tools for controlling Drax construction has been the Management Group. This is almost like a federal body made up of representatives of all the main contractors and employers' Federations with Mr Ron Burbridge, director of projects for the CEGB's construction division, acting as chairman. Mr Elston refers to the role of the generating board in this grouping as that of a "benign dictator."

The Management Group sets up the policies and procedures which are geared to harmonising site employment, conditions and pay, enabling contractors from different industrial sectors to manage their own labour forces in a comparable manner.

All site contractors are required to participate in the group, the small contractors having their role represented by Mr Elston, Mr Maurice Brunton, the site manager, presents overall site reports to the group meeting, and once a collective decision has been taken, all contractors must abide by it.

By making common employment policies, the main aim of the group are to remove friction between trades and the separate workforces, prevent pay leapfrogging, and secure acceptable productivity. One result is that skilled workers in different groups earn within plus or minus 10 per cent of about £200 a week.

The group effectively lays down rates of pay, once the framework has been agreed with the unions, common working rules and dispute procedures. Every month it monitors total earnings, bonuses and overtime, and whether payments are being made for correct reasons. Employment changes contemplated by contractors and every dispute and proposal for settlement come before the group which can administer a severe rap on the knuckles though no financial penalty.

A working group goes through contractors' employment conditions which are fine tooth combed. "We are trying to avoid disaffection," says Mr Elston. Among the items included in employment harmonisation are pay, travel, the use of special clothing, and timing of tea breaks.

Examples of the problems dealt with by the group included a tank erection company which was proposing a payment unacceptable to the group, companies outside the engineering employers' federation whose bonus payments needed bringing into line and a coating company which was required to adjust its working practices. Mr Neville Simms, a director of Tarmac Construction, says the group works well despite the odd burst of irritation on the part of some contractors. "People have accepted the responsibility for making it work."

The role of the management group dovetails into the National Agreement for the Engineering Construction Industry which overtook a site agreement which the CEGB had been working on. The National Agreement, designed to rectify many of the problems which have beleaguered construction in the UK, sets out guidelines for earnings based on a cost factor and incentive table, and the basis for disciplinary procedures.

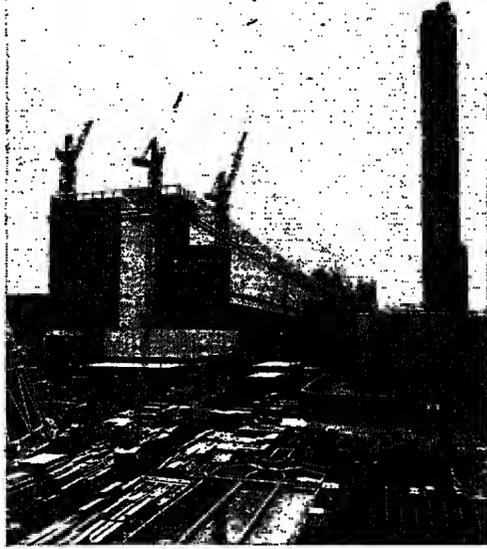
A Study Group, made up of contractors and national and local trade union representatives meeting every six months, is another unusual feature of Drax. This group reviews bonus schemes, demarcation and other problems and their possible solutions.

At the same time, Drax, as with other multi-contractor projects, has a Project Joint Council (PJC) which applies national agreements and arranges a Supplementary Project Agreement. The PJC is made up of equal numbers of management representatives and union officials with shop stewards.

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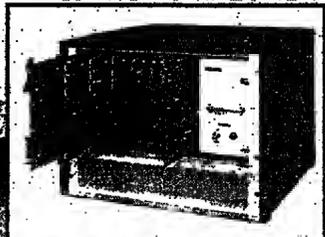
DRAX completion stage is also being equipped with three NEI Parsons 660MW machines — the first of which was recently synchronised one month ahead of schedule.



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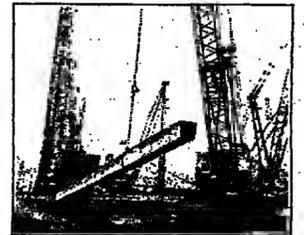
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DRAX III

Drax will meet a tenth of the power needs of England and Wales

Energy mainstay for years to come

SUCCESSFUL completion of the first stage of Drax B — fourth of the six 660 MW units of the entire Drax complex — "provides real life support" for the campaign to build Britain's first pressurised water reactor (PWR) at Sellafield, Cumbria, according to a top CEBG official.

This reaction applies the messy balance between the nuclear and non-nuclear parts of the electricity industry and is a reminder of the difficulty encountered by Mr Tony Benn when, as Energy Secretary in 1977, he forced the CEBG to start building the second part of the plant at Drax.

In spite of the controversy at that time, and doubts about whether without Mr Benn's support, the Drax completion would ever have been launched, the electricity industry itself does not regard nuclear power as a full-scale replacement for coal.

In the wake of the energy crisis of the 1970s, it was recognised that oil was too costly as a basic fuel for generating electricity and that thanks to Britain's coal deposits coal would remain the dominant fuel for the nation's power stations, with nuclear plants being added to ensure flexibility, reliability and economic pricing in the 1990s and beyond.

The interdependence between coal and power has been compared by a senior CEBG director to that between eggs and bacon. In 1982-83, more than 82 per cent of electricity in England and Wales was produced from coal, with the CEBG purchasing 78m tonnes, two-thirds of the National Coal Board's output.

Little more than 14 per cent of electricity in that year came from nine nuclear power stations.

Prices According to John Baker, CEBG Board member in charge of public affairs, NCB coal accounts for nearly 35 per cent of the cost of a unit of electricity to the final user, of which half goes into miners' wages. Every 6 per cent rise in miners' pay, he adds, raises electricity prices by 1 per cent.

The CEBG's payments for coal — calculated at £90 a second — represent nearly three-quarters of its total fuel

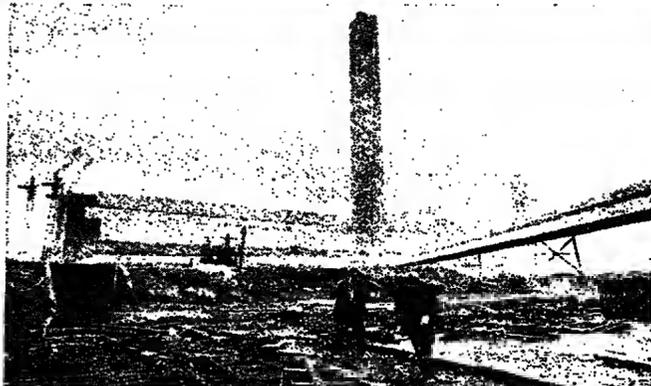
CHRONOLOGY OF DRAX POWER STATION
1962 CEBG development plan includes a "Yorkshire Power Station," intended to be a 1,500 MW site with three 500 MW sets to be commissioned between 1968 and 1970.
1964 Drax, on south bank of the River Ouse, identified as the site to contain three 660 MW units.
1966 New development plan decides on the UK's first three 660 MW coal-fired units, to be commissioned between 1971 and 1973. Work authorised on site with space for six 660 MW units and six auxiliary 35 MW gas turbines.
1967 Work begins on first three 660 MW units, the so-called Drax A.
1973 First two units synchronised with the grid.
1974 Third unit synchronised. Drax A becomes operational.
1977 Tony Benn, Energy Secretary, authorises start on second half of Drax power station, 18 months earlier than originally intended.
1981 Gas turbines synchronised, two months ahead of programme.
1983 (December) Drax's fourth 660 MW unit—the first part of the Drax Completion—supplies first electricity to grid.
1984 Unit four to be fully commissioned. Units five and six to follow in 1985 and 1986.

pits kept open for "social" reasons. But in spite of these strains between the two State-owned industries, the CEBG has no illusions about its future reliance on coal, whatever the course of Britain's economic development or whatever the result of its quest to build FWR nuclear plants. The CEBG has a number of diverging forecasts about its requirements at the end of the century. It claims to have greatest faith in the calculation that at 70m tonnes a year, its coal burn in the year 2000 will not be all that different from today's consumption. But even its most pessimistic assumption about growth in electricity demand, entailing the burning of 60m tonnes of coal annually in power stations, would still ensure that the CEBG remained the Western world's biggest coal user.

But whatever scenario turns out to be most reliable, Drax power station should still stand out as one of the mainstays of the whole generating system at the beginning of the next century. Remarkable both for its size and its expected efficiency, the completed 4,000 MW plant will be able to produce more than

a tenth of all the electricity used in England and Wales. It is one of four coal-fired plants which the Board calls the Aire Valley stations. The other three, with a combined capacity of 5,000 MW, are Eggborough, Ferrybridge and Thorpe Marsh. CEBG officials in the North East region office at Harrogate note proudly that on some days in the year such as August Bank Holidays, Drax and the rest of the Aire Valley group could supply nearly all the power used in England and Wales.

The commissioning of the complete Drax station, they add, should reduce the costs of the whole CEBG system by about 1 per cent, currently worth about £55m a year. If the station is run continuously instead of older, less-efficient stations. Together with a similar 1 per cent savings from new nuclear plants, such as Hartlepool and Heysham, this would help to contain the cost of electricity, and even reduce it. Drax A is currently the CEBG's second most efficient coal-fired plant (after Rugeley in the Midlands). On completion, it is likely to take first place in the efficiency league table. Drax is also remarkable for the quantity of coal it will use.



Construction in progress: the project's second phase is currently priced at £1bn

Already consuming 5m tonnes a year, the complete station will burn double that amount, equivalent to the yearly output of the new Selby super-pit being developed by the National Coal Board a few miles to the north across the River Ouse. Worth more than £400m at current prices, and roughly equal to the wages of 60,000 Yorkshire miners, this represents one-seventh of the CEBG's entire coal-burn, ensuring that the Board's north-east region overtakes the Midlands power stations as the largest user of

British coal. British Rail will deliver the coal to Drax on 1,000 tonne "merry go round" trains, which will unload there at the rate of 37 a day. This service will cost the CEBG about £100m a year. The trains will bring coal from several pits in the North East, thus helping to ensure miners' jobs in several locations. However, some CEBG officials are toying with the idea of concentrating all the Selby coal at Drax, making it one of the few large single coal-field plants in the world and further

enhancing its efficiency. Even without this additional benefit, however, Drax already stands out what Robert Weekes, the CEBG's north east regional director, calls "the very limit of the state of the art" of building coal-fired power stations. Drax's high performance reflects the steady improvement in the efficiency of oil as well as coal-fired stations. Since 1947, the thermal efficiency of fossil-fired plants as a whole has improved by more than half. Maurice Samuelson

Big names resound among the legion of contractors

ONE OF THE Government's main reasons in June 1977 for ordering the completion of Drax power station was to provide much-needed business for Britain's faltering generating plant manufacturers, based largely in the North East.

It was a prescient move considering the then unforeseeable depths to which the economic recession was to sink in the ensuing seven years.

The 120 main contracts have been providing work for companies as far apart as Balfour Beatty in Scotland, Farnborough in Southern England, Norfolk in East Anglia, in addition to scores of companies in the industrial centres of England.

Together with their associated subcontractors, up to 1,000 companies are thought to have been involved at various stages.

The project was valued at £688m at the tender date in early 1978 (and is currently priced at about £1bn). Its biggest elements are the boilers, the civil engineering work, the turbine generators and the electrical installations.

On the basis of the original costs, the boilers were worth £200m, the civil engineering £135m, the turbines £130m, and the electrical contracts about £50m. There was also £54m worth of miscellaneous work, as well as engineering charges assessed at 3.5 per cent of the total.

On the hardware side, the contractors are led by NEI Parsons of Newcastle (the three 660 MW turbines and generators) and Babcock Power (the three boilers).

Other members of the NEI

group are responsible for building other parts of the plant, including chlorination and nitrogen storage, the extension of the water treatment, control and instrumentation, switchgear, transformers and structural steelwork.

Gas turbines Besides designing and constructing the boilers, the Babcock group is also associated with the plant for handling ash and dust, while parts of the General Electric Company (GEC) are installing three auxiliary 35 MW gas turbines and generators and associated plant and coal handling gear.

A particularly sensitive part of the boilers are the feed pumps, developed by Weir Pumps of Glasgow. Their function is to supply water at very high temperature and pressure to the boilers raising steam for the turbines. The pumps are designed to run for five years between major overhauls.

The main civil engineering work is in the hands of Tarmac (building the main foundations) and Sir Alfred McAlpine (the superstructure), while almost 40,000 tonnes of structural steelwork has been erected by Arrol/Findlay (a consortium of Sir William Arrol, part of NEI, and Alexander Findlay, of Motherwell).

The six cooling towers are being built by MacAlpine in consortium with the Barrum Group. The former is building the foundations and the latter, a specialist in tall structures, is erecting the towers.

Some 30,000 cables, with a total length of more than 1,500 miles, are being laid by N. G. Barley of Bradford.

The high-pressure pipes are being laid by Alton of Derby, part of the Whessoe Group. The difficulties, and the ways they were surmounted, are graphically illustrated on the series of large charts used by Jack Elston, the CEBG's manager of the project.

They show much of the work starting late, but with the lines on the graphs converging to show how the contractors have sought to win back lost time. The troubles started at the outset with an eight-week closure because of an industrial dispute over the credentials of one of Tarmac's shop stewards. Other problems involved at the foundations stage were the

need to re-design the large ash-pits behind the boiler house on discovering that the coal to be used at Drax had a 40 per cent higher ash content than previously supposed. Delays were also caused by the difficulties of mating the new foundations with those of the first half of the power station, completed several years earlier.

Tarmac, together with MacAlpine, also had to comply with one of the most unusual specifications required by the CEBG. This was for the use of "cold" concrete like that developed in major contracts in the Middle East.

The method, designed to prevent thermal shrinkage, involves putting ice-cold water into the cement. Despite the success of this innovation the earlier delays

encountered by Tarmac meant that its part of the work was completed 26 weeks late. From this point on, other contractors had to perform like relay runners trying furiously to catch up.

Arrol/Findlay, with 38,000 tonnes of structural steel to erect, was to have begun work on March 1 1980, and to have finished it on February 1 1983. However, it did not gain full access until 20 weeks after its official starting date. In 1981, it had what Elston calls "a good year" and caught up seven weeks by the time the drum was hoisted into the first boiler.

Then came the harsh winter of 1981-82 which meant that no steel could be put up for six weeks. After further acceleration in 1983 work was again interrupted by heavy rains. The end result, nevertheless, was that over three years, the contractors cut the delay from 26 weeks to ten.

M. S.

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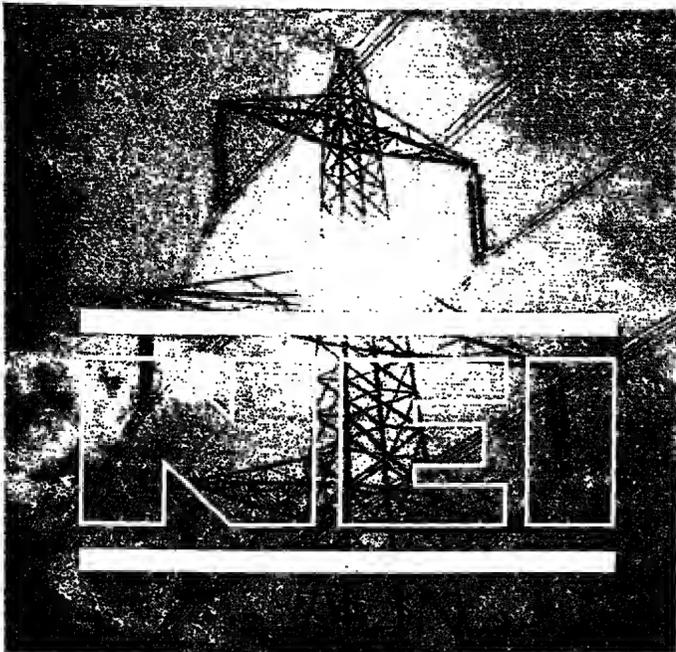
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DRAX IV

Twenty-acre glasshouse provides nearly 1 per cent of the country's tomato needs

Surplus heat used to produce food

ONE OF the more unusual aspects of Drax is that reject heat from the station is used in the production of food. A joint CEBG-Express Dairy venture operates a 20-acre glasshouse producing almost 1 per cent of the tomatoes eaten in the UK.

A short distance away, RHM Aquacultural Developments, part of Ranks Hovis McDougall but with 25 per cent involvement from the CEBG, runs what is claimed to be the largest intensive eel farm in Europe.

Though this latter venture has struggled with some technical difficulties and is operating below expected capacity, it has now just about reached trading break-even.

The CEBG carried out a series of trials at the Eggborough power station between 1975 and 1978 to test the use of waste heat from cooling water for horticultural crop production.

The generating board and Express Dairy, which had also been investigating energy conservation, initially invested £250,000 in 1978 for a pilot horticultural scheme at Drax and a year later a joint company, Exel Produce was set up, Express Dairy taking 51 per cent and the generating board 49 per cent. Express Dairy also purchased a 105-acre farm adjacent to Drax in anticipation of the trial's success.

Exel now incorporates a massive 20-acre glass house, claimed to be the second largest in Europe, producing 2,800 tons of tomatoes a year, as part of the £2m joint venture.

The heating system uses condenser cooling water from the power station which is drawn off before it reaches the cooling towers and pumped to the glasshouse through 48-inch diameter underground pipes which at peak take a daily flow of 800 gallons. The water, after passing through heat exchangers where the heat is extracted as warm air, is then returned to the cooling towers.

The company calculates that a conventional 20-acre oil-heated glasshouse in the UK would require just under 1m gallons of fuel oil per year, costing £400,000 at 1981 prices. The Exel glasshouse costs about half of that to run.

Flow

The heat exchangers are computer-controlled to maintain air temperature in the glasshouse's separate sections. This is done by the phased operation of the pumps and fans which regulate the flow of condenser cooling water and air distribution. There is a central computer controlling dosage of the growing medium, acidity, environment and other factors using a software package specially specified by Exel.

Employment varies between 35 and 100 depending on the season. Most of the staff were trained when recruited but the company offers training in horticulture.

Exel which had a turnover last year of £1.5m and makes a trading profit after depreciation sells daily to supermarket chains. The UK's total tomato demand is about 330,000 tons per year of which 190,000 tons are imported. Exel says there is an opportunity to make a



Above: tending tomatoes in the extensive glasshouses. Heat exchangers through which the waste hot water flows are computer-controlled to maintain the correct temperature. Right: sorting eels for size at the eel farm. The young eels are kept in indoor tanks for a year then transferred to the outdoor lagoons



substantial reduction in imported produce.

The company has a long-range plan to quadruple the glasshouse acreage to 80 acres. The reject heat from Drax would be sufficient to heat a glasshouse acreage that would meet the whole UK tomato demand but that would require such a colossal acreage and funding as to be totally impractical.

The RHM eel farm is a very different kettle of fish. Ranks Hovis McDougall started fish farming research 14 years ago, concentrating on freshwater prawns. This line of research was abandoned three years later, leaving RHM with warm-water technology but no species to apply it to.

When RHM looked at eels it saw a market in Europe for 30,000 tonnes of these a year with a production shortfall on the Continent of 5,000 tonnes. Imports were and are being brought in from North America and New Zealand during the winter months when it is too cold for eels in Europe and they go dormant for several months. The use of hot water provides the need for eels to sleep during the early months of the year so this would be a target market time for an intensive eel farm.

A pilot plant with four small ponds was commissioned and two years later RHM aquacultural developments was formed with £750,000 capital split 75 per cent, 25 per cent between RHM and the generating board. In 1979 the first stocking of eivers was begun.

Again, the eel farm takes

water by natural pressure through pipelines from the inlet point of the Drax cooling towers. For adult eels the water drains through the lagoons, runs over wet boards into a drainage channel and then into a pump-up sump from where it is pumped back to the station. Immature stock which are kept in smaller indoor tanks have a separate water system.

Target

The warm water greatly adds to productivity because it allows the eels to be active right through the year and a water temperature higher than that found naturally in the UK is much closer to the ideal for rearing them.

From a first-year output of five tonnes, yearly sales have now reached 130 tonnes. That means three quarters of a million eels and a turnover last year of £405,000.

The planned target and the plant's design capacity however was 200 tonnes. The biggest problem has been the water temperature. The generating board expected the water to be at 30 deg C as against an optimum growth temperature of 28 deg C. However, the water is better than envisaged and can be as high as 44 deg C. At that temperature, water has less oxygen so can sustain less life and it also reduces growth rate.

Mr David Evans, director and general manager of Aquacultural Developments, says the only way to raise tonnage is to try to reduce the temperature down or build more lagoons. The source of the eivers and the company's sales contacts are

two issues which the company has had to develop and has done so successfully. "We could sell for more than we produce," Mr Evans says.

European eels breed in the Sargasso Sea and take three years to swim to Europe where they congregate on the Continental Shelf once a year. The spring tide brings them into Britain through a number of inlets, the main one being the Severn Estuary. The company buys the eivers or "glass eels," which at that point weigh a third of a gram each, from fishermen.

The eivers are kept in the indoor tanks for a year during which their weight rises to 10 grams. They are then transferred as adult eels to the outdoor lagoons where they are kept for a further year where, fed on a modified commercial

trout diet, they increase in size to an average of 150 grams and a foot in length. That two years' growth would take seven years in the wild.

Some 80 per cent of output goes abroad for smoked eel, most of it through four dealers in Holland and West Germany. Much of this is collected by Dutch and German haulage firms at the farm.

The company sells the fattened eels for the UK market direct to London dealers. These have less fat content than the European smokers which are themselves divided into various groupings. The German market, for example, wants bigger eels than the Dutch. The differences in eels and markets has been, in itself, an education for the company.

Nick Garnett

Bid to put ash to better use

ONE OF THE lesser known activities of the Central Electricity Generating Board is marketing the ash produced by its coal-fired power stations.

Each of the five generating regions has its own marketing office with a central office at the board's London headquarters. Of the total 13m tonnes of ash the power stations produce, the ash marketing branch sells 4.6m tonnes, earning £4.6m in revenue. This figure has been static for the past few years largely because of the downturn in the construction industry which is the principal ash consumer.

The rest of the ash is disposed of at most stations, normally by mixing it with water and pumping the resulting slurry into lagoons which can be grassed as they solidify. There is no suitable land around Drax to do this so waste ash from the first phase of Drax has been compacted to form a low hill at an old Defence Ministry base at the nearby village of Barlow. The ash is treated with a polymer to prevent it blowing away and, with topsoil and grass, the hill is now used for sheep farming.

Granular

Power stations generate two types of ash. The coarse, granular ash which forms at the bottom of the boiler is known as ash from the first phase of Drax makes up about 20 per cent of the total. This is marketed largely as an aggregate for the production of breeze blocks in the construction industry and is sold direct to block-making companies.

The rest is known as pulver-

ised fuel ash (PFA), sometimes called fly ash, which is a fine powder collected from the smoke screen before it escapes up the chimney. This is a much more interesting product than that taken from the boiler bottom and is now subject to a good deal of research by the generating board and private companies to discover further applications.

The building of the second phase of Drax is an example of the way PFA can be used as a partial replacement for cement in structural concrete up to between 25 and 45 per cent of normal cement content.

The ash marketing branch says the use of PFA has resulted in a 1m saving in the cost of constructing the second Drax phase.

Pulverised fuel ash is used in more than half a dozen ways. By far the biggest outlet is road construction where it is used as structural fillings—the ash conditioned with water and consolidated in layers by road rollers to create a sub-base medium.

The second biggest use is in the production of building blocks such as heat insulating, lightweight thermalyte. It is also utilised as a lightweight aggregate, by mixing the ash with a number of other substances, including coal and water, which is then rolled into pellets and cooked on a furnace bed. This has been used in the concrete constructions such as the National Westminster head office tower block in the City of London. Pozzolamic Lytag is one company marketing ash for this purpose.

Apart from cement replace-

ment in the use of concrete, as utilised in the Drax construction, PFA is also used as a cement substitute in grouting for such tasks as sewer repairs.

Fly ash can be incorporated in brick manufacture, partly replacing some of the clay body and as a low grade fuel for the firing of the bricks.

Agreements

The marketing branch has been developing a whole range of new uses since the mid-1970s, not just to find new sectors in the construction industry to replace declining markets but also to tap into other industrial sectors.

This has taken it into some advanced technical areas beyond its own research programme on the structure and character of ash, resulting in product development and also in the use of co-operation agreements with private companies to harness research and marketing skills.

In the higher technology areas, glass spheres within PFA are used as a filler in plastics or resin, for use, for example, in the production of car bumpers and in the manufacture of heat insulation material in the aerospace industry.

The ash marketing branch says the generating board is committed to a substantial research and development programme into the uses of ash. "The construction industry now appreciates PFA as a valuable byproduct which can be used with advantage in replacing traditional materials which are non-renewable."

N. G.

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DRAX V

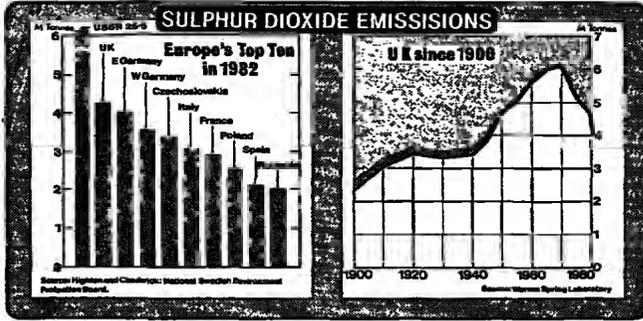
The design of future coal-fired stations will be tightened up to cut sulphur emissions

EEC increases pressure on acid rain

DRAX POWER station seems certain to be the last of its kind. It will probably be the last coal-fired power station built in Britain without flue-gas desulphurisation scrubbers. A strong hint that this could be so came in the last annual report for 1981 of the Alkali and Clean Air Inspectorate. At the end of a section on pollution by sulphur dioxide, which reviewed rising European concern about the possible contribution of this gas to the problem of acid rain, the report concluded: "The powers of the Inspectorate stem from legislation intended to protect the population and environment of England and Wales and it is unlikely that action could be taken under the legislation in order to protect the environment in other countries. At the end of the first duty of the Inspectorate is to prevent emissions to air where it is practicable to do so, irrespective of whether damage is caused by them. The Inspectorate's proposals for new fossil-fuel generating plants, but if and when they come forward the scope for preventing or reducing emissions of sulphur dioxide will need to be considered positively in the light of experience now being gained in other countries. By the time the Inspectorate writes its yearly reports, the Commission will be well on the way to completing its design specifications were complete by 1977, which was well before the end of the debate shifted from being an isolated patch of scientific and pressure group drizzle to becoming a full-scale political downpour. The most recent and potentially most far-reaching result of that change was the publication this month of a draft EEC directive which would require member states to cut their output of sulphur dioxide by 60 per cent of oxides of nitrogen by 40 per cent and of dust by 40 per cent—all by the year 1993. In addition, the directive sets specific emission limits for new fossil fuel power plants of 400 milligrammes per cubic metre of waste gas in the case of sulphur dioxide, falling to 250 mg per cu metre after 1995. These standards for new plants are in line with the stringent restrictions adopted unilaterally by West Germany last summer, following a wave of political concern about the large-scale damage to the country's forests. The only way into the standards could be met, it is imposed, would be by widespread use of waste-gas scrubbing techniques—fine gas desulphurisation.

Washed out

The British Government and CEBG find themselves with an undesired central role in these events because, as the table shows, Britain is a very large producer of sulphur dioxide. This chemical, when released into the atmosphere, carried by wind and then washed out as rain or mist, is believed by some scientists and many politicians, especially in Germany and Scandinavia, to be a prime cause of acid rain. This, in turn, is argued to be a prime cause of the dying forests and, in the case of Scandinavia, the dying or dead lakes and streams. Not surprisingly, both the Government and the industry have responded with a mixture of caution and anxiety towards this state of affairs. They argue, with considerable evidence on their side, that the connection between the malaise of the forests and lakes and acid rain is far from proven and that even if it were to be accepted as a working hypothesis, there are strong grounds for believing that even a large reduction in power station pollutants would not cure the problem. Many scientists, both within and beyond the CEBG, are inclined to scoff at the quality of the scientific evidence offered so far by the acid rain lobby, but those who have been more heavily exposed to the force of the political arguments in Brussels do not underestimate the scale of the political threat. "I think that the politicians demands some action. The expectation from the politicians and the public is that something is going to be done and I think



that ultimately something will be done," says Mr John Clarke, head of environmental services at the CEBG, expressing a personal view. Just what will be done depends most of all upon the progress of the commission's draft directive. From the British point of view, any numbers at all will represent change, since the present law in the UK merely requires that the alkali inspec-

tor determine "the best practicable means of pursuing its goals of controlling air pollution. There are no general numerical targets, either for old plants or new. For the most part, the inspectors have been content to advise the industry to deal with its emissions simply by building higher chimneys—a policy which attracts strong criticism from Britain's downwind neigh-

bours on the other side of the Channel and the North Sea. The Drax design reflects this regime. However, one thing is certain: it will cost the CEBG, the taxpayer or the electricity consumer a lot of money. If the CEBG is obliged to carry the entire burden of re-

Burden

ducing the nation's sulphur dioxide and nitrogen oxides emissions to within the proposed EEC limits, the board's rough estimate is that it would cost £2bn and add 10 to 15 per cent to the operating costs of the power stations affected. If the entire cost were loaded upon the price of electricity, bills would rise by about 7 per cent. This would involve fitting flue-gas desulphurisation scrubbers to the chimney stacks of the plants, modifying the plants' boilers so as to burn more of the nitrogen oxides produced when coal and fuel oil are burned and increasing the size of the dust collectors, which use electrostatic plates to filter out particles of soot. The expensive part is the scrubber, which would cost £117m just for the second stage of Drax—twice that for the entire installation. Drax's running costs would rise by about £50m a year—mainly the cost of collecting and disposing of the pollutants removed from the gas.

It was this problem of how to dispose of the pollutants which, curiously enough, finished off the last British experience with flue-gas desulphurisation in the late 60s when the scrubbers at the famous, but now defunct, Battersea power station in London had to be closed down because water from the gas-washing plant was causing a serious pollution problem in the Thames. At their peak, Battersea's scrubbers, which forced the waste gas through jets of water and chalk in suspension, culled 90 per cent of the sulphur from the emissions—a creditable standard even for the more modern scrubbers used today in Japan and West Germany. Another way of reducing the amount of sulphur in power station waste is to wash the coal before it is burned—an option which the CEBG is currently exploring with the National Coal Board, although that in turn raises the difficult question of who should pay for the washing. One of the more significant ironies of the entire acid rain debate becomes evident as these cost calculations are made: that is if coal-powered electricity generation is to become more expensive, the relative economic advantage of nuclear power will increase.

Digital control of boilers gives more flexibility

Micros taking over to match demand

CONTROL OF up to 2000 MW of electricity power enough to run 1m two-bell electric fires from the three big turbo-alternators in the second, completion phase of Drax has been entrusted to the micro-processor. It is one of the first examples of direct digital control by microcomputers of a large-scale steam-raising plant. Ten years ago, when the micro-processor was known only to leading edge workers in the semi-conductor business, power engineers would have balked at the idea of "software and chips" controlling 300 ft tall boilers and massive coal pulverisers. But times have changed. The nuclear stations, which are able to produce electricity more cheaply, are today used preferentially to meet the basic consumer demand—the "base load"—while the coal and oil-fired stations are switched on and off the demand in response to rising and falling through the day and night. Other demands can occur in ways that seem peculiar but are now familiar to control centre engineers. For example, at the end of the Royal Wedding on July 1981 when Prince Charles and Lady Diana left Waterloo Station, demand rose in a few minutes by nearly 2,000MW (the whole output of Drax) as millions of viewers went to the kitchens to brew tea with electric kettles. Cold snaps in the weather have similar, if slower-acting, effects. The result of all this is that large coal-fired stations like Drax, which at one time ran at their rated outputs most of the time, nowadays must be either partially or fully started up or shut down at short notice. That implies cost-effective, flexible control systems, which is where the micro-processor comes in together with specially tailored software.

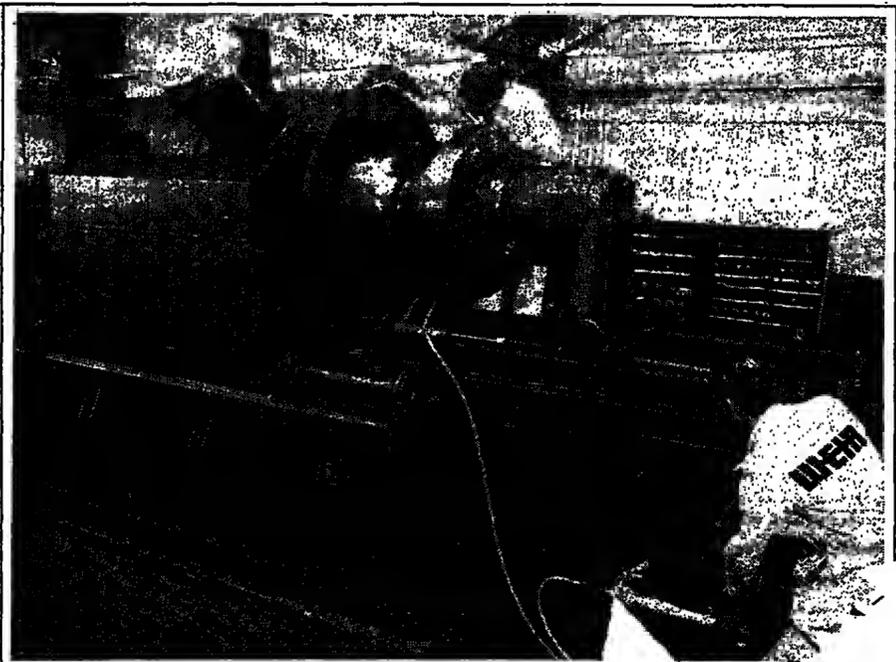
DC—that were a measure of quantities favored, such as pressure, temperature and flow rate. When small computers of high enough reliability and low enough cost began to appear in the 1970s, digital control became feasible, in which the control voltages and current levels were replaced by strings of bits of pulses coded (rather like Morse code) to represent plant values. The essential aspect of direct digital control (DDC) is that the control action is vested in software—the programs of the computer—rather than in the steel and copper of mechanical and electrical hardware, and so can be changed simply by running a different program. A few years ago the micro-processor became so cheap, powerful and compact that engineers decided to use them where they were needed around the plant rather than depend, as in earlier systems, on one large central computer. Then, a computer fault does not cripple the whole or a large part of the station. Thus in 1981, contracts worth about £5.7m were placed by the CEBG. Two worth about £3.7m were awarded to Solartron Schumberger for data collection and monitoring systems and two other totaling £2m went to Babcock Birstal for control equipment. The controlled parameters include feedwater levels and flows, combustion air, superheater and re-heater steam temperature and individual control of the 10 coal mills. Some 2,000 variable and alarm states are shown in a wide variety of formats, on colour "television" displays at the station's control desks, with push-button call-up of text, numeric and graphical data, and plant mimic diagrams. There are 18 micro-processors on each boiler unit, eight for direct boiler control and 10 for start-up and shut-down. LSI 11/23 processors from Digital Equipment Company (DEC) have been used and the software for direct control has been written in the CEB's own high level computer language called Cutlass. Work on Cutlass (it stands for Computer Users' Technical Languages and Application Software System) began at CEBG research centres when it was concluded that power engineers needed, first, a control system programming language that was independent of the computer used; second, one tailored to their particular engineering needs; and third, one that needed no comprehensive knowledge of computers or programming. Cutlass allows engineers working in specific areas of power station control to perfect their programs and integrate them on a time-slot basis for overall control of the plant. The main areas are sequence control for start up and shut down, DDC to increase or decrease plant variables, and graphics/text generation for the display consoles. An indication of the complexity of the modern power station is afforded by the fact that over 3,000 analogue inputs and some 7,000 status/event input lines are monitored at Drax. Altogether seven supervisory computer systems and 21 intelligent data centres,

with associated peripherals (printers and disc stores for example) form a distributed data network operating over high-speed communications links. Digital control and Cutlass, vital features at Drax, will be of great utility throughout CEBG. It is estimated that Cutlass will reduce the manpower needs of control rooms by 20 per cent. The essential aspect of direct digital control (DDC) is that the control action is vested in software—the programs of the computer—rather than in the steel and copper of mechanical and electrical hardware, and so can be changed simply by running a different program. A few years ago the micro-processor became so cheap, powerful and compact that engineers decided to use them where they were needed around the plant rather than depend, as in earlier systems, on one large central computer. Then, a computer fault does not cripple the whole or a large part of the station. Thus in 1981, contracts worth about £5.7m were placed by the CEBG. Two worth about £3.7m were awarded to Solartron Schumberger for data collection and monitoring systems and two other totaling £2m went to Babcock Birstal for control equipment. The controlled parameters include feedwater levels and flows, combustion air, superheater and re-heater steam temperature and individual control of the 10 coal mills. Some 2,000 variable and alarm states are shown in a wide variety of formats, on colour "television" displays at the station's control desks, with push-button call-up of text, numeric and graphical data, and plant mimic diagrams. There are 18 micro-processors on each boiler unit, eight for direct boiler control and 10 for start-up and shut-down. LSI 11/23 processors from Digital Equipment Company (DEC) have been used and the software for direct control has been written in the CEB's own high level computer language called Cutlass. Work on Cutlass (it stands for Computer Users' Technical Languages and Application Software System) began at CEBG research centres when it was concluded that power engineers needed, first, a control system programming language that was independent of the computer used; second, one tailored to their particular engineering needs; and third, one that needed no comprehensive knowledge of computers or programming. Cutlass allows engineers working in specific areas of power station control to perfect their programs and integrate them on a time-slot basis for overall control of the plant. The main areas are sequence control for start up and shut down, DDC to increase or decrease plant variables, and graphics/text generation for the display consoles. An indication of the complexity of the modern power station is afforded by the fact that over 3,000 analogue inputs and some 7,000 status/event input lines are monitored at Drax. Altogether seven supervisory computer systems and 21 intelligent data centres,

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Geoff Charlish

Ian Hargreaves



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year programme in cooperation with the CEBG, was designed for reliability and ease of maintenance. All the internal wearing parts removed and replaced very as a single cartridge disturbing the drive align main pipework, while a shaft minimises vibration generated metal-to-metal contact ensures that in emergency can run dry without damage pump will stand severe shock, hot or cold, with differentials of up to 200. Weir is by far the most experienced and producer of power station pumps based on the same concept as the Drax pumps, including 85 nuclear-fuelled and nuclear stations in the United

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DRAX VI

Drax is proving a showcase for workers' and management talents

Benefits for workforce as project's success grows

BOTH THE contractors and the workforce are hoping to benefit from the progress of Drax as a model construction site and the last word in coal-fired power stations.

A union official on the site's joint management committee confirmed earlier this month that men being laid off as the steel construction contract slowed down were being surprisingly successful in finding new work in the North East, in view of the industrial recession.

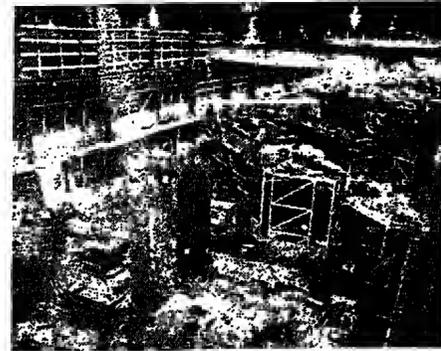
Their success may be attributed to the lack of trouble on the site and the skillful way in which contractors and employees had accelerated their work to counteract initial delays.

Jack Elston, the CEBG's manager of the project, describes the men as a "well motivated and self-disciplined labour force already used to building power stations."

Some 75 per cent of the Drax labour force, which at its peak last spring numbered 3,000, was recruited in the North East. It included 50 men accommodated with their families in special caravans, and whose children attended the local village school.

Subsidiary

Another 350 unattached men are accommodated in the main construction camp nearby, run by ARA, the UK subsidiary of the U.S.-based industrial catering empire which will be in charge of the



Inside the boiler house. The skill with which initial delays at the site were overcome has attracted attention from electricity authorities overseas.

catering at the forthcoming Los Angeles Olympics. (Its UK leisure division caters at Wembley Stadium in London.)

Entertainment facilities in the recreation building at Drax include snooker, table tennis and video players with hired cassettes. The nearest town for an outing is Selby, a few miles away, which sits on top of the super-pit which will supply much of Drax's requirements.

The Drax completion is also proving to be a show

case for overseas power utilities, who have been sending a constant stream of people to inspect it.

Among the visitors in January were a team of vice-presidents of U.S. utilities belonging to the American Round Table business organisation.

Their interest is more than casual, since the management plan which the CEBG used for controlling the work at Drax was inspired by a major study which the Round Table carried out into the short-

comings of the U.S. construction industry.

In the past year, there were also three visits by the Indian electricity authorities connected with the coal-fired power station being built at Rihand, India, with British assistance.

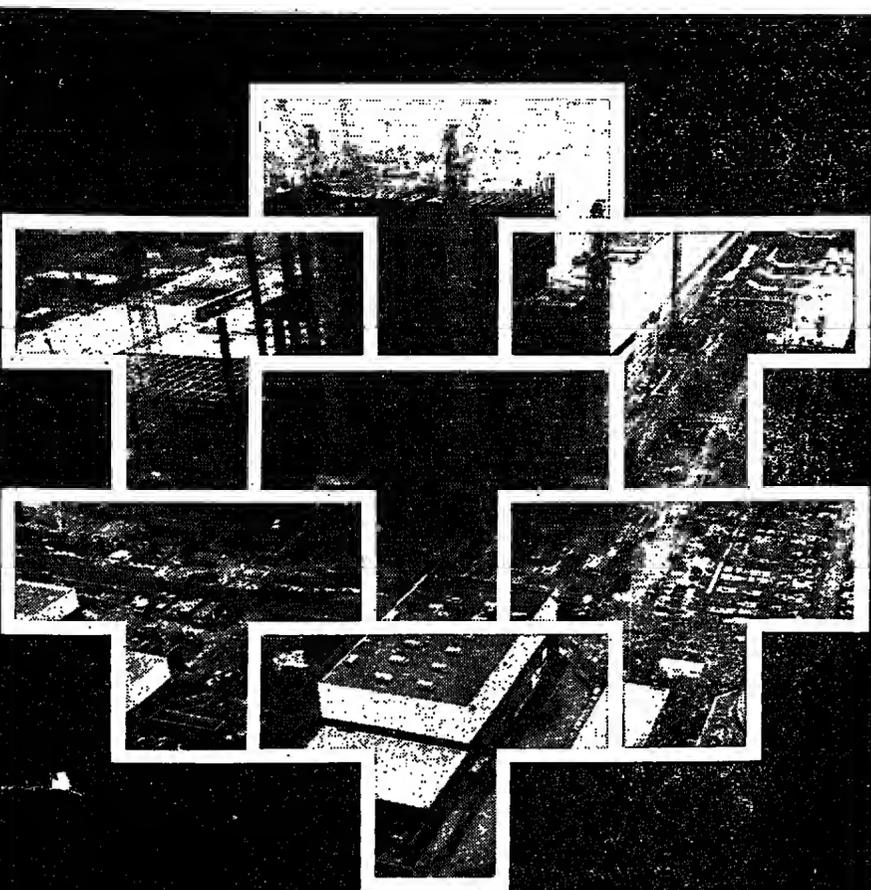
Inspect

The Dutch electricity authorities also came to Drax to inspect the way the inmates of Drax's year are being worked into a landscape site a mile away.

On the other hand, when a team of Japanese officials from Mitsubishi arrived last summer, they seemed more intent on selling the CEBG than learning from it. With an eye on the international concern over acid rain and sulphur dioxide emissions, they gave the CEBG a presentation about Mitsubishi equipment for the scrubbing of emissions from fossil-fuel power stations.

The CEBG is not yet in the market for such equipment as the Japanese left empty-handed, but at least one CEBG official was left with the impression that Japanese manufacturers are far ahead of British industry in this potentially large market. British manufacturers, on the other hand, claim that once the market develops, they will be able to enter it with very little delay.

Maurice Samuelson



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Projects are running out as UK construction programme dwindles

Expertise being offered abroad

THE CONSUMING problem facing the Generation Development and Construction Division is not a technical one, but the simple fact that its work is running out.

Within a year its only power station construction operations in England will be completion of the final phase of Drax, due to be finished in the middle of 1986, and on Heysham II, due to be completed the following year.

Even if building of the Sizewell B nuclear pressurised water reactor station eventually goes ahead, perhaps in 1987, the division's 1,700 workforce will have to be cut substantially. If Sizewell B does not go ahead, Mr John Collier, the division's director general, says the division's workforce will shrink by more than

half.

That position would be a far cry from 1971 when the division was set up and geared to building one power station a year. When the division moved to its existing office site, at Barnwood near Gloucester, ten years ago, its 2,100 staff were handling ten major projects, seven at peak construction life.

Peak

Now, Heysham I, Harbottle and Dunham, all advanced gas-cooled reactor nuclear stations, are at the commissioning stage together with the last units at the Dinorwic station in Wales. Littlebrook D has now become fully operational and there is only one unit out of the four at the Isle of Grain oil-fired station to be completed.

JACK ELSTON: PROJECT MANAGER

Keeping a close eye on the schedules

JACK ELSTON has been living and breathing the final phase of Drax since he took over as project manager in October 1981, just as the erection of boilers and turbines began.

His job is a reflection of the pressures and workloads which many senior managers have to endure, though frequently enjoy. It has also meant some physically taxing effort, not least the 400-mile round trip Mr Elston usually makes every week between his office near Gloucester and the Drax site.

In dealing with contractors he says that you can either bully or lead from the front. "My technique and philosophy is to lead from the front," he says, while paying tribute to the Generating Board team around him.

"I'm useless without these people. I help create the right environment so they can do their job."

In an odd but understandable statement he says that the pressures of a project manager are frequently greater when a project is running on time, as is Drax.

Tightrope

If you are already six months behind schedule, the loss of another week does not look so awful. Managers become almost resigned to it.

When you lose two days on an operation that was on time, however, it becomes a matter of urgency to get it back on track. "It's like walking a tightrope from which you mustn't fall. When you have fallen off, and you're right in the mud, I'm afraid resignation can set in."

Mr Elston, a 53-year-old married man who has the added burden of sharing with his wife the problem of caring for a physically-handicapped son, has worked in electricity generation since leaving school. He joined the then Leeds Corporation Electricity Department as an apprentice,



Jack Elston: leading from the front.

before becoming a draughtsman in the construction office of the Yorkshire division of the pre-nationalisation British Electricity Authority.

He was project manager for Littlebrook D before moving on to Drax. Controlling the construction project is in itself a very demanding job, whether it is dealing with contractors or unions face to face, sitting in on a joint problem solving meeting, signing payment certificates (£150m worth this year), or controlling the monthly reports on the project.

Apart from that however, Mr Elston has overall responsibility for safety on all the generation development and construction division sites as well as chairing the division's mechanical resources unit.

Dealing with the welter of contractors on the Drax project, is the underlying key to Mr Elston's work. His rule on that is simple—give them a hard task but a good environment in which to do the job.

N. G.

One of Mr Collier's tasks is to try to attract new forms of work for the division by, for example, encouraging British contractors and foreign power station owners, to use the division's expertise in project management and construction.

Other forms of work that might open up include combined power and heat supply stations near cities, a subject on which the Government has yet to make a formal decision, and conversion of oil stations to coal.

The division's senior management sees part of its job as trying to make sure that the division keeps its expertise intact before the next major series of power station constructions, which the Central Electricity Generating Board (CEGB) expects, actually begins.

Some of the later power stations built by the division will come to the end of their life in less than 25 years from now, but the division says it would be harmful not to have a gradual construction programme rather than a concentrated build effort.

The division is one of three functional divisions within the generating board, the other two being technical planning, research and development, and transmission and technical services.

The construction division has sections dealing with the mechanical and electrical aspects of station design, and a plant engineering department divided up into specialist areas of boilers, turbines, nuclear installation, materials and pressure parts.

Under Mr Ron Burbridge, director of project management, there is a clutch of managers in charge of the separate project

teams for Drax, Grain, Littlebrook, the Dinorwic scheme near Snowdon, a small hydro station at Kielder, Northumberland.

A separate director deals with the PWI and there is a different project management structure for the nuclear stations whose construction the CEBG is involved with.

Barnwood's basic job has been designing and controlling the overall construction of non-nuclear power stations as well as building nuclear power stations apart from their nuclear islands.

A large part of the task involves stitching together both on site and at Barnwood, the separate but interlinked activities of different contractors. One technical drawing by one contractor, for example, could cut across the work of a dozen other contractors. Those contractors need to know the implications of that design on their own work.

Barnwood also carries out design work on a whole series of systems including piping, heating and ventilating. About a tenth of the division's activities are taken up by design, modification and other work on plant that is already operating even though the five regions have their own engineering capability.

The division has some limited consultancy work abroad. This includes a full consultancy for the construction of the Rihand coal-fired station in India for which it is assisting both the Indian Government and Northern Engineering Industries.

It is also providing assistance in the construction of a peak B in Hong Kong, China Light and Power and on a number of projects in Australia.

Ni Garnett

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